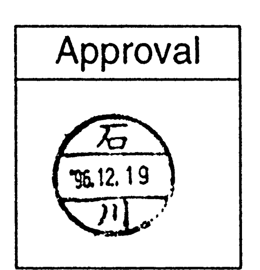
OKI

OL600*e*/610*e* LED Page Printer

Troubleshooting Manual with Component Parts List

Approval



All specifications are subject to change without notice.

CONTENTS

1. OUTLINE

2. TOOLS

3. CIRCUIT DESCRIPTION

4. TROUBLESHOOTING

5. COMPONENT PARTS LIST

6. CIRCUIT DIAGRAM

1. OUTLINE

This manual has been written to provide guidance for troubleshooting of the OL600e Series Printer (primarily for its printed circuit boards), on an assumption that the reader is knowledgeable of the printer. Read the maintenance manual for this printer P/N M-521313 (ODA) and/or P/N M-521309 (OEL) if necessary.

Notes:

1. The power supply board (OLER/OLHR) containing a high voltage power supply is dangerous. From the viewpoint of the safety standards, the local repairing of a defective board is not allowed. Thus, the objects to be locally repaired as a result of troubleshooting are switches and fuses.
2. Replacement of CPU (MHM2029K) is not recommended. If CPU is found to be defective, board replacement is suggested.

2. TOOLS

For troubleshooting the printer, the tools listed below may be needed in addition to general maintenance tools.

Tool	Remarks
Extension cord kit	P/N: 4YA4121-2028G2
Oscilloscope	Frequency response 100 MHz or higher
Soldering iron	A slender tip type, 15-20 watts

3. CIRCUIT DESCRIPTION

3.1 Outline

The control board controls the reception of data transferred through a host I/F and processes command analysis, bit image development, raster buffer read. It also controls the engine and the operator panel. Its block diagram is shown in Fig. 3-1 through 3-4.

(1) Reception control
The control board has one centronics parallel I/F port. The PostScript board (option or resident) has one LocalTalk (RS-422) serial interface port. One of the two I/F ports which receives data first can be used automatically.
The other I/F port outputs a busy state signal.
The parallel I/F port can specify the following item when set by the control panel:
I-PRIME: Enabled/Disabled

The LocalTalk (RS-422) I/F port, which can be used for PostScript emulation mode, can specify the following items when set by the control panel:

Protocol:	LocalTalk/RS-422
RS-422 settings	
Baud rate:	300/600/1200/2400/4800/9600/19200/38400 (Baud)
Data bit:	7/8 (bits)
Parity:	NONE/ODD/EVEN

An interface task stores all data received from the host into a receive buffer first.

(2) Command analysis processing
The OL600e series printers have the following emulation modes.

Laser Jet Series IIP Plus :	Hewlett Packard	OL600e/OL600ex
Laser Jet Series IVP :	Hewlett Packard	OL610e/OL610ex
PostScript Level 2 :	Adobe	OL610e/PS

An edit task fetches data from the receive buffer, analizes commands, and reconstructs the data in such a way that print data are aligned from up to down and from right to left; then it writes the resultant data into a page buffer with such control data as print position coordinate, font type, etc. added.

(3) Font Processing
When one page editing is finished, a developing task makes an engine start and fetches data from the page buffer synchronizing with a printing operation; then it developes the fetched data to a bit map as referring to data from a character generator, and writes the resultant data into the raster buffer (of band buffer structure).

(4) Raster buffer read.
As controlling the engine operation, an engine task sends data from the raster buffer to the LED head.

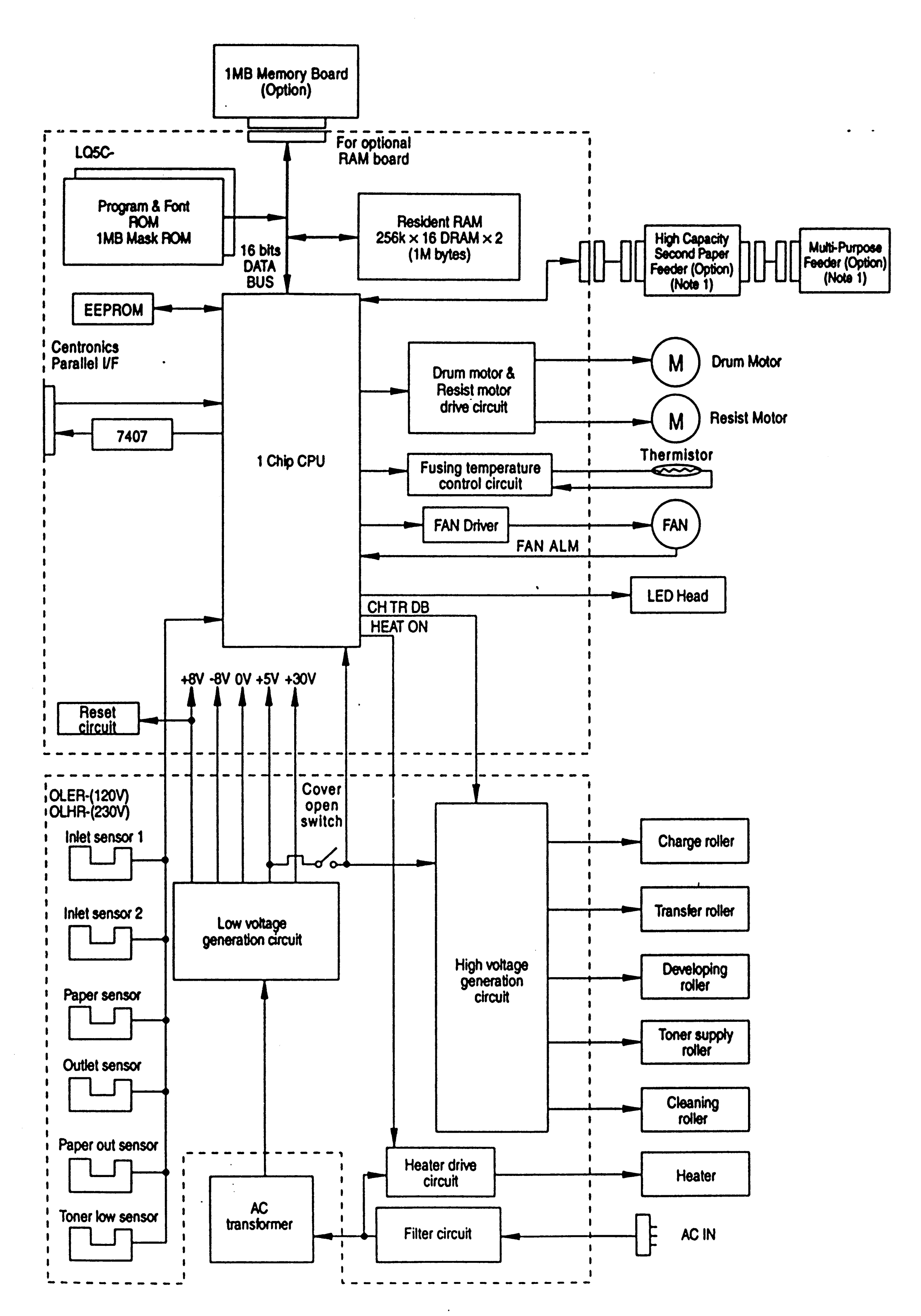


Figure 3-1 OL600e/OL600ex Block Diagram

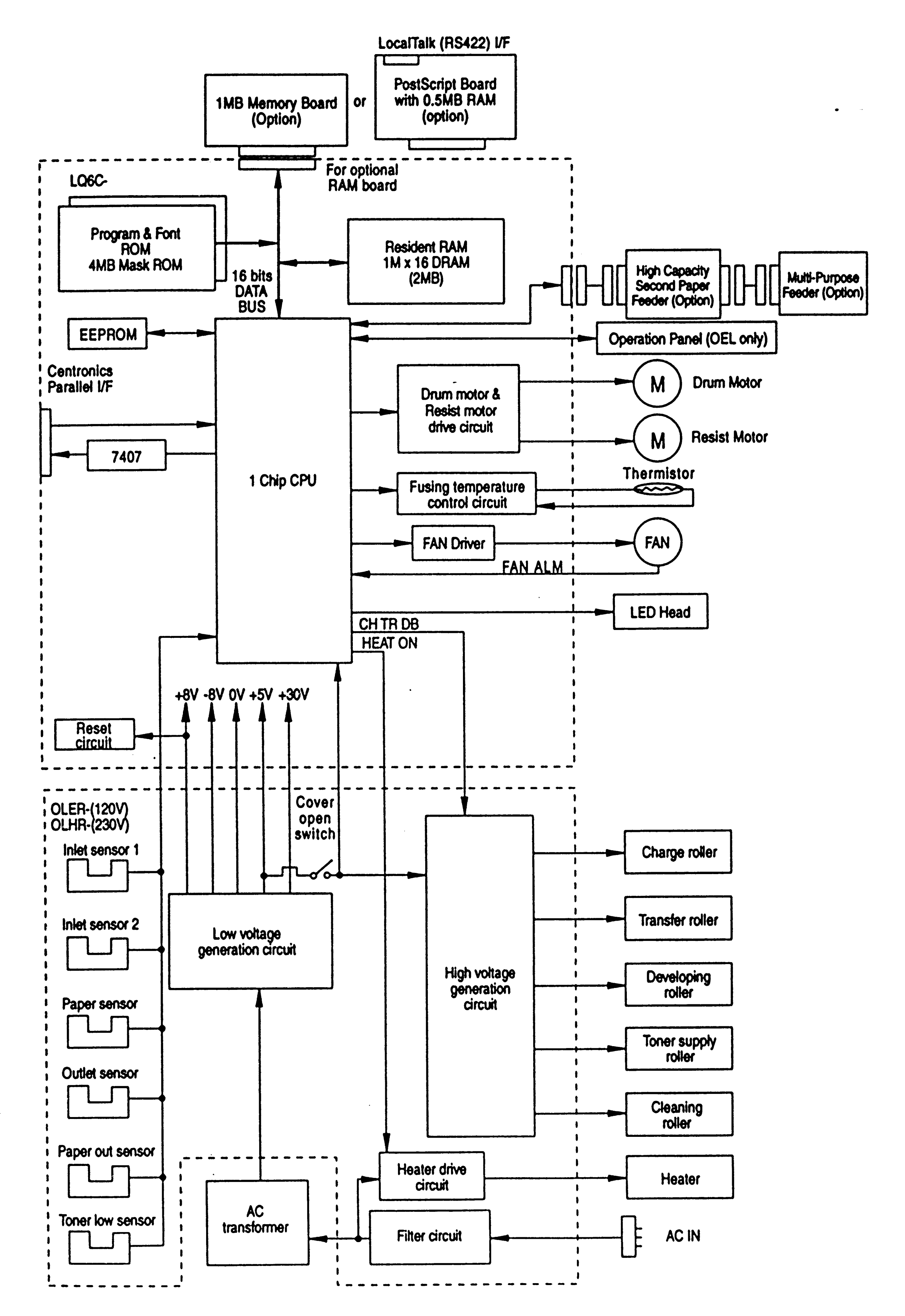


Figure 3-2 OL610e/OL610ex Block Diagram

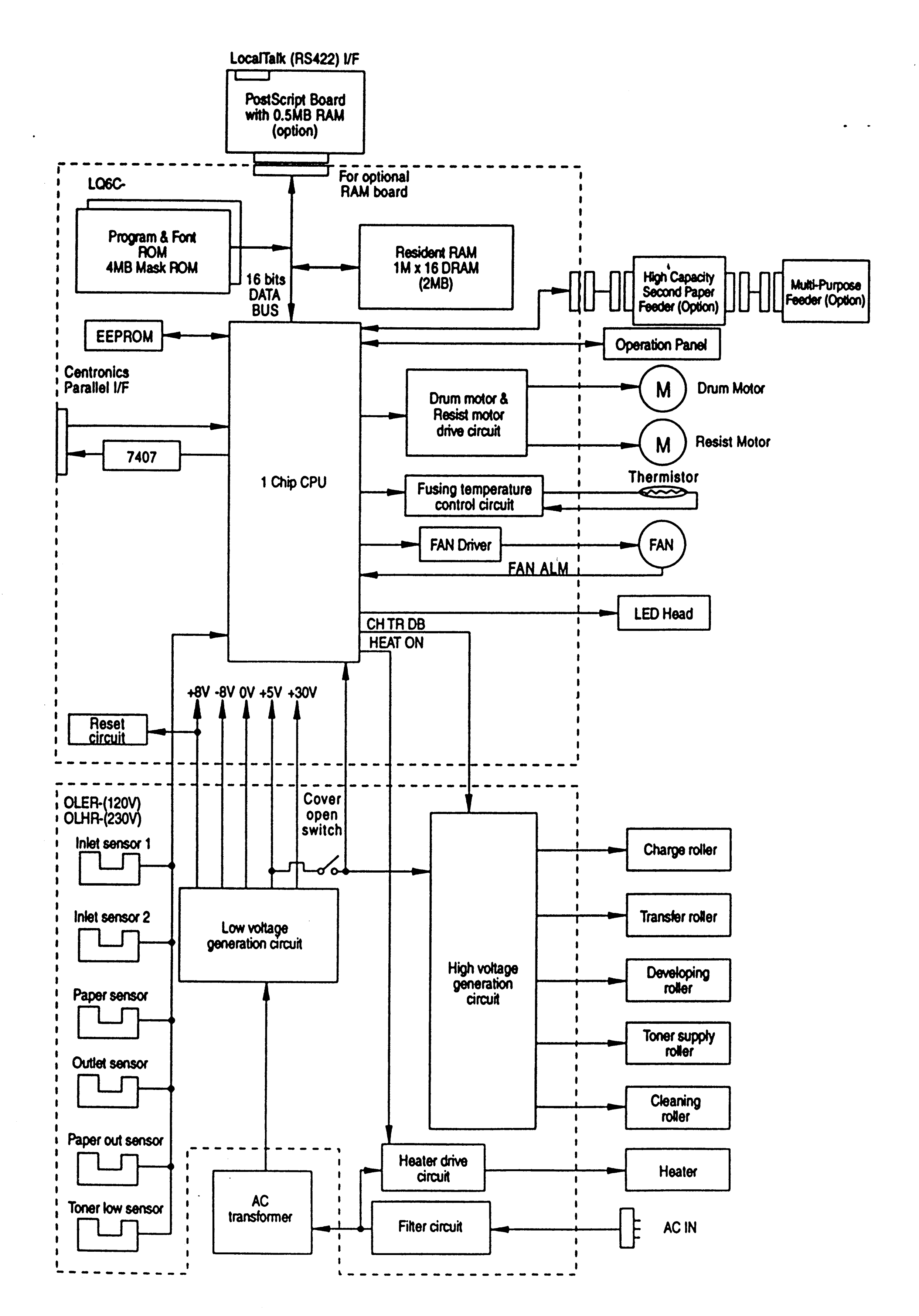


Figure 3-3 OL610e/PS Block Diagram

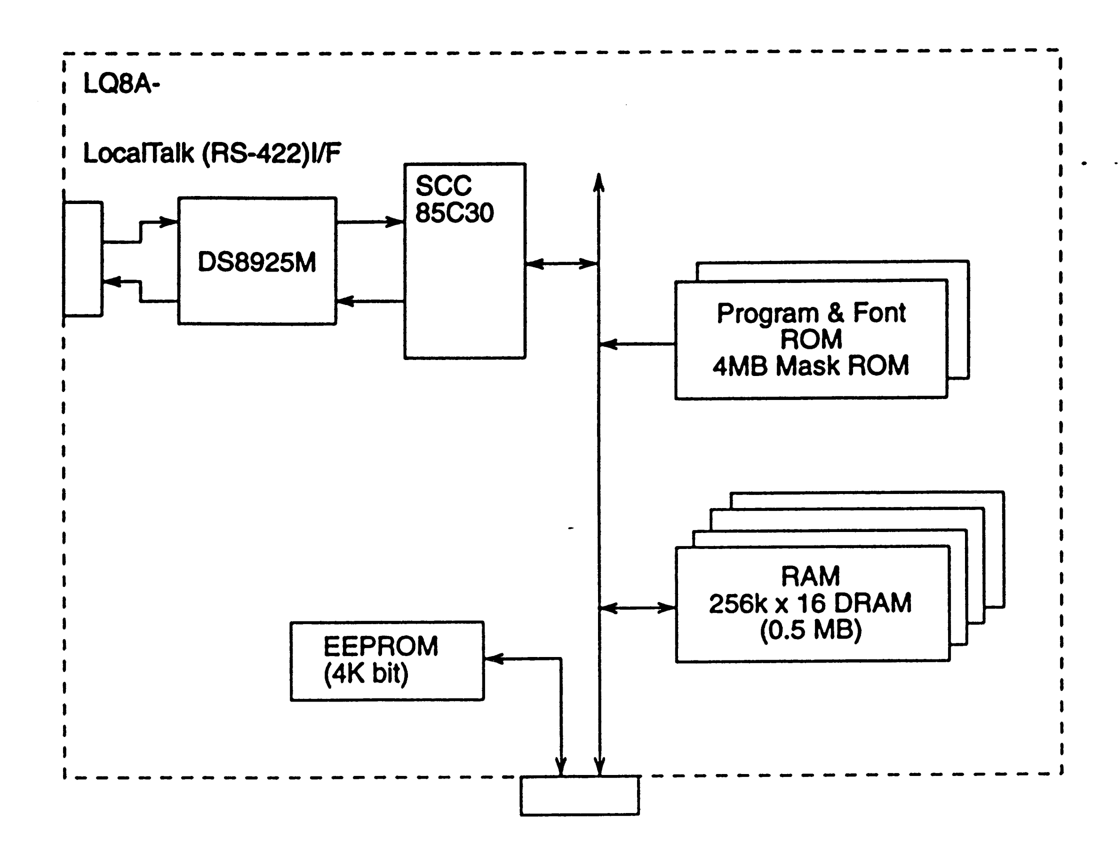


Figure 3-4 PostScript Board Block Diagram

3.2 CPU and Memory

(1) CPU (MHM2029K-002K)

CPU core	RISC CPU (MIPS R3000 compatible)
CPU clock	24.576 MHz (OSC is 12.288 MHz)

(2) Program ROM

ROM capacity	1MB (8-M bit mask ROM) for OL600e/600ex and 4MB (32M bit mask ROM) for OL610e/610ex
ROM type	8M bits (512k x 16 bits) for OL600e/600ex and 32M bits (1M x 32 bits) 120ns for OL610e/610ex
Access time	100 ns for OL600e/600ex and 120ns for OL610e/610ex

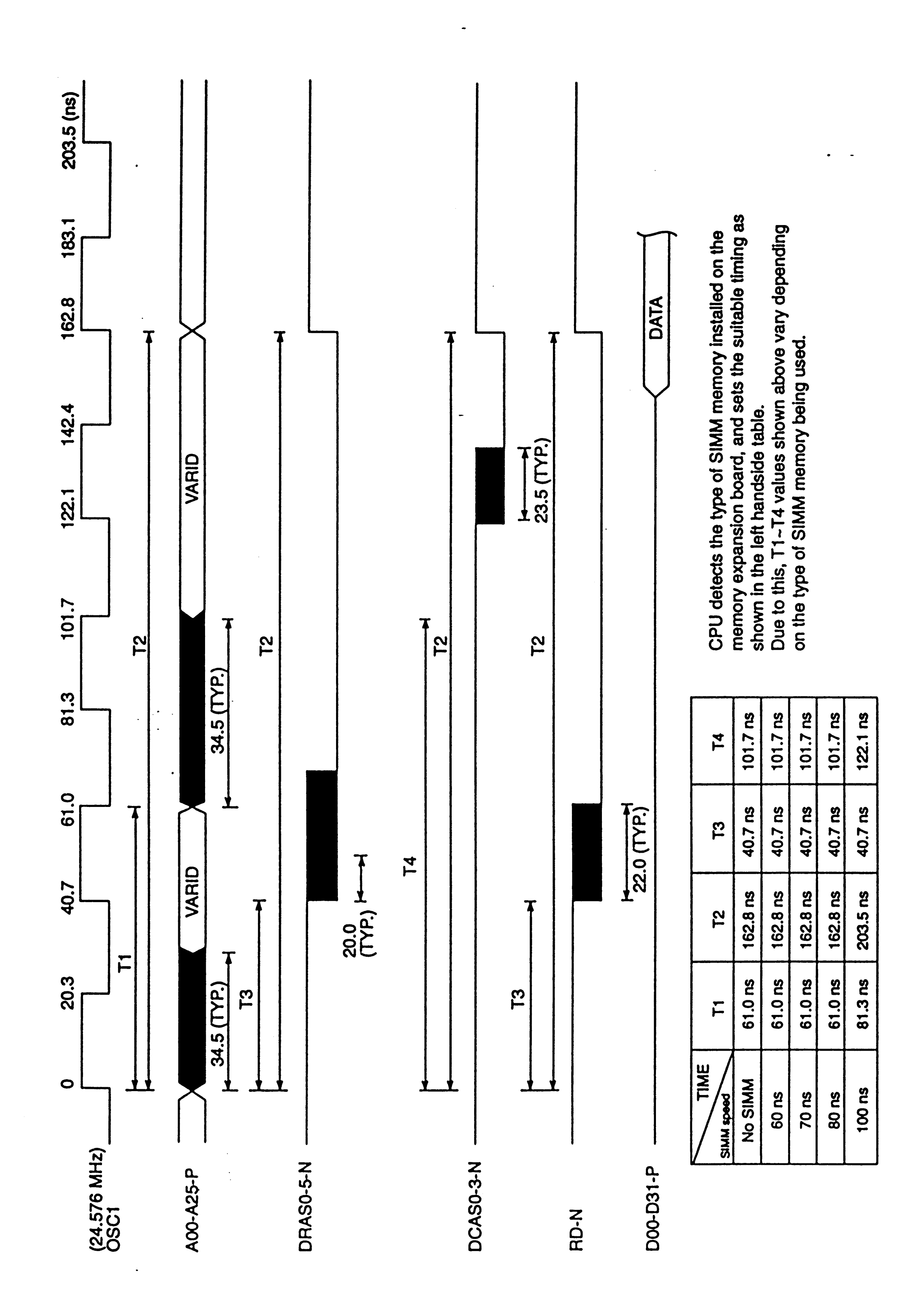
(3) Resident RAM

RAM capacity	1MB (4M bit D-RAM, 2 pieces) for 600e and 2MB (16M bit D-RAM, 1 piece) for 610e
RAM type	4M bits (256k x 16 bits) 16M bits (1M x 16 bits)
Access time	80 ns

(4) Expansion SIMM

RAM capacity	1/2/4/8/16MB SIMM
RAM type	72 pins
Access time	60 ~ 100 ns

The block diagram of CPU and memory circuit is shown in Fig. 3-5 through 3-10.



SIMM speed \ TIME	T1	T2	T3	T4
No SIMM	61.0 ns	162.8 ns	40.7 ns	101.7 ns
60 ns	61.0 ns	162.8 ns	40.7 ns	101.7 ns
70 ns	61.0 ns	162.8 ns	40.7 ns	101.7 ns
80 ns	61.0 ns	162.8 ns	40.7 ns	101.7 ns
100 ns	81.3 ns	203.5 ns	40.7 ns	122.1 ns

CPU detects the type of SIMM memory installed on the memory expansion board, and sets the suitable timing as shown in the left handside table.
Due to this, T1~T4 values shown above vary depending on the type of SIMM memory being used.

Figure 3-5 Block Diagram of CPU & Memory in OL400e/OL400ex

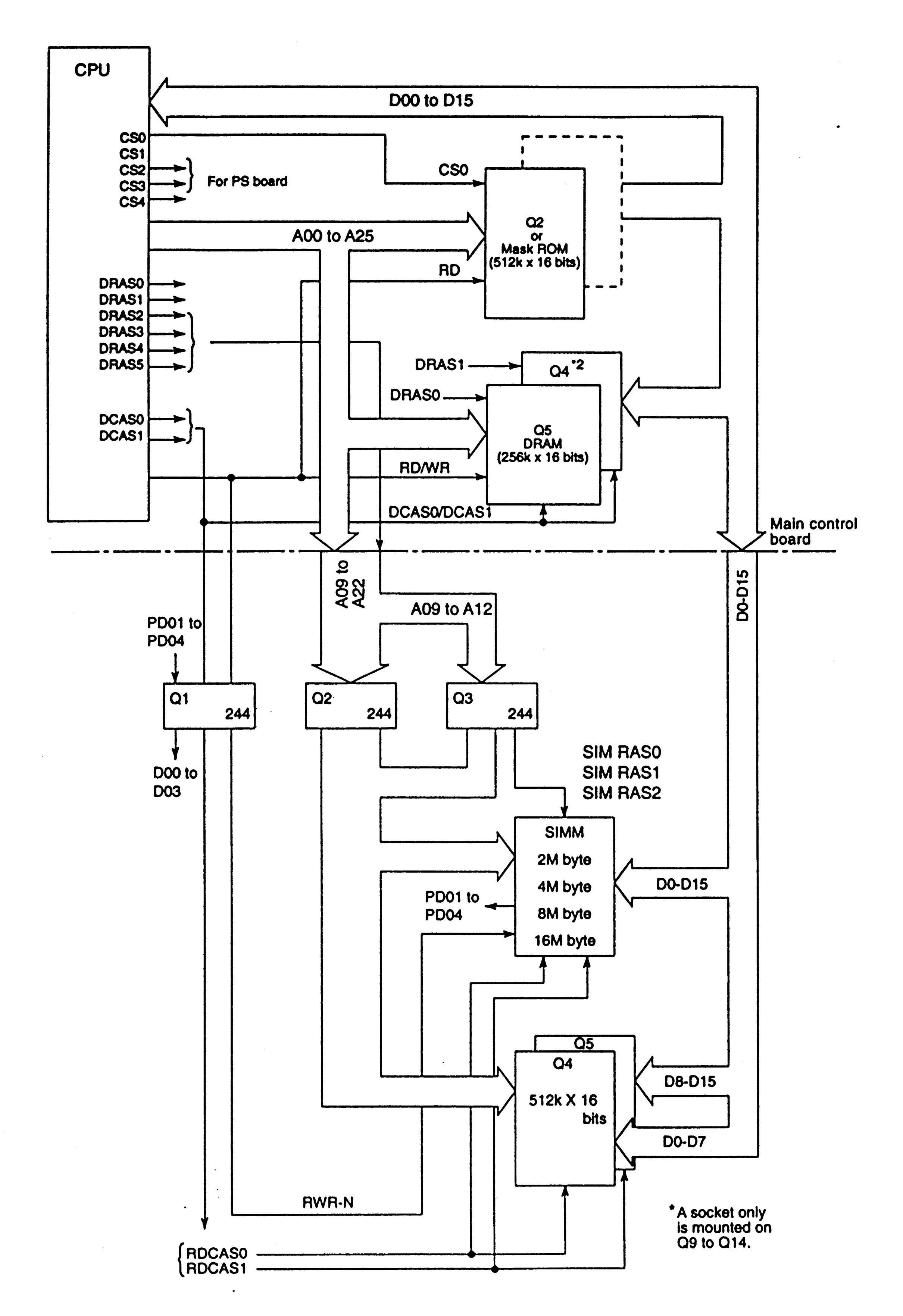


Figure 3-6 Block Diagram of CPU & Memory in OL600e/OL600ex

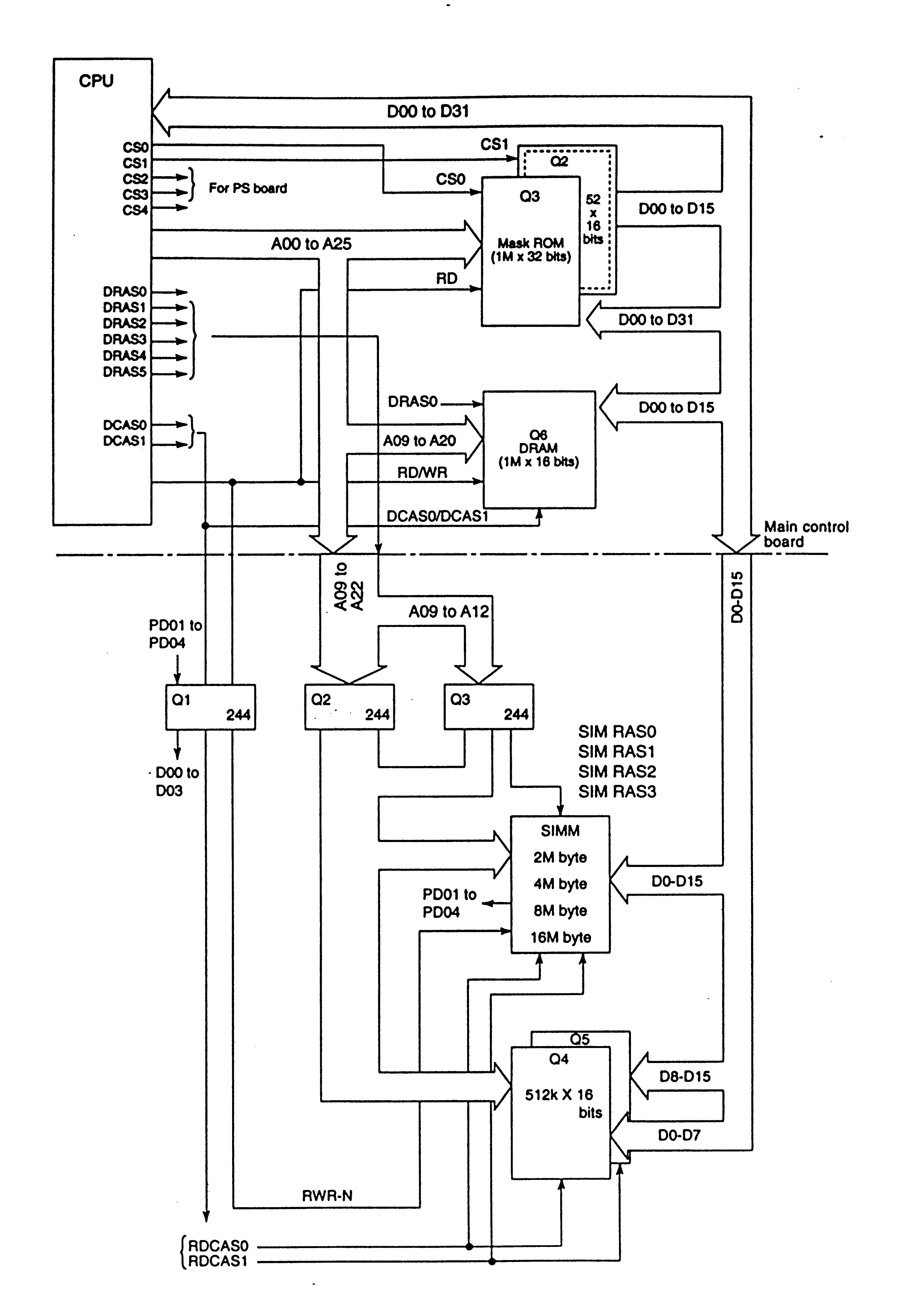


Figure 3-6 Block Diagram of CPU & Memory in OL610e/OL610ex

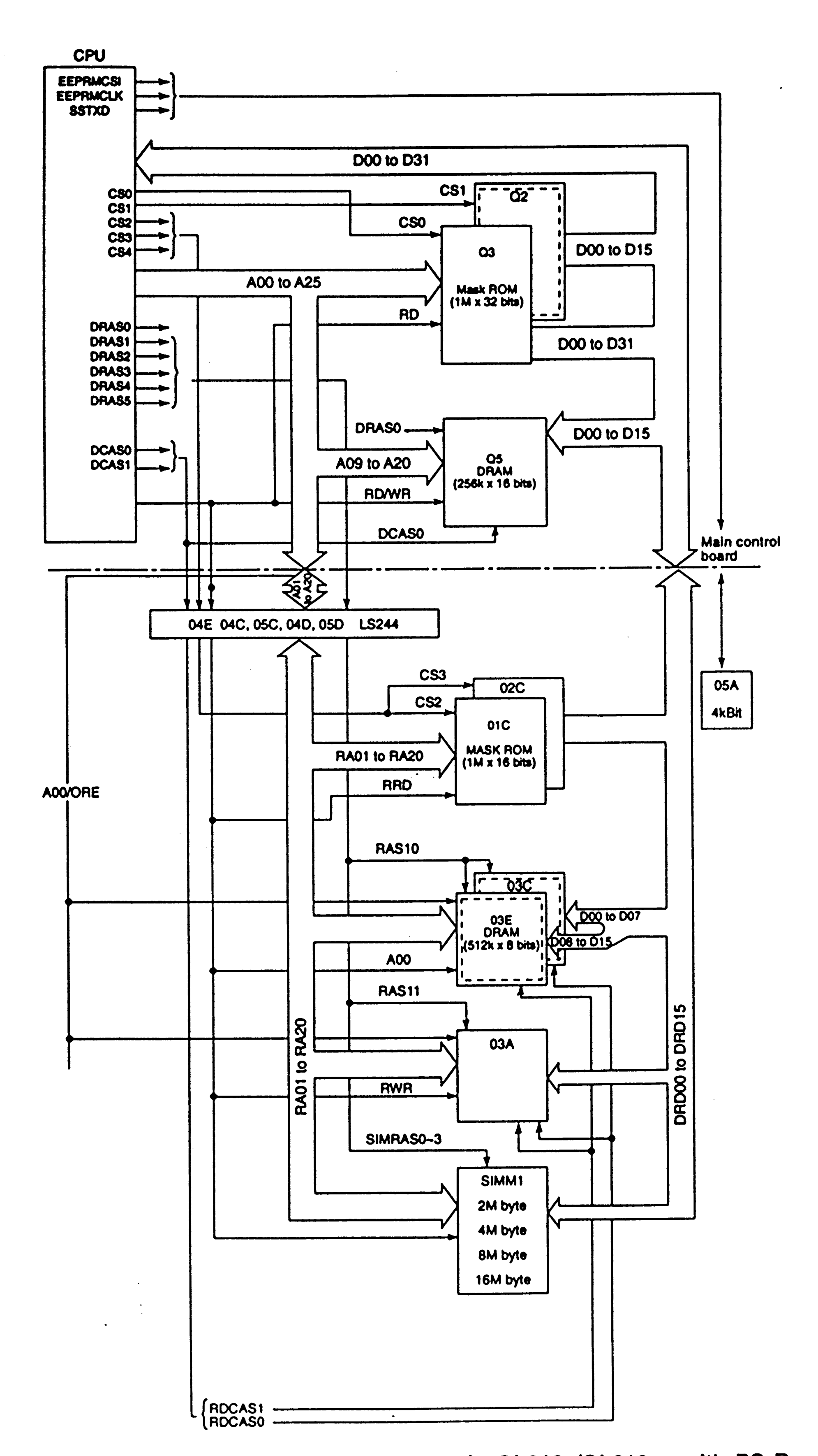


Figure 3-7 Block Diagram of CPU & Memory in OL610e/OL610ex with PS Board

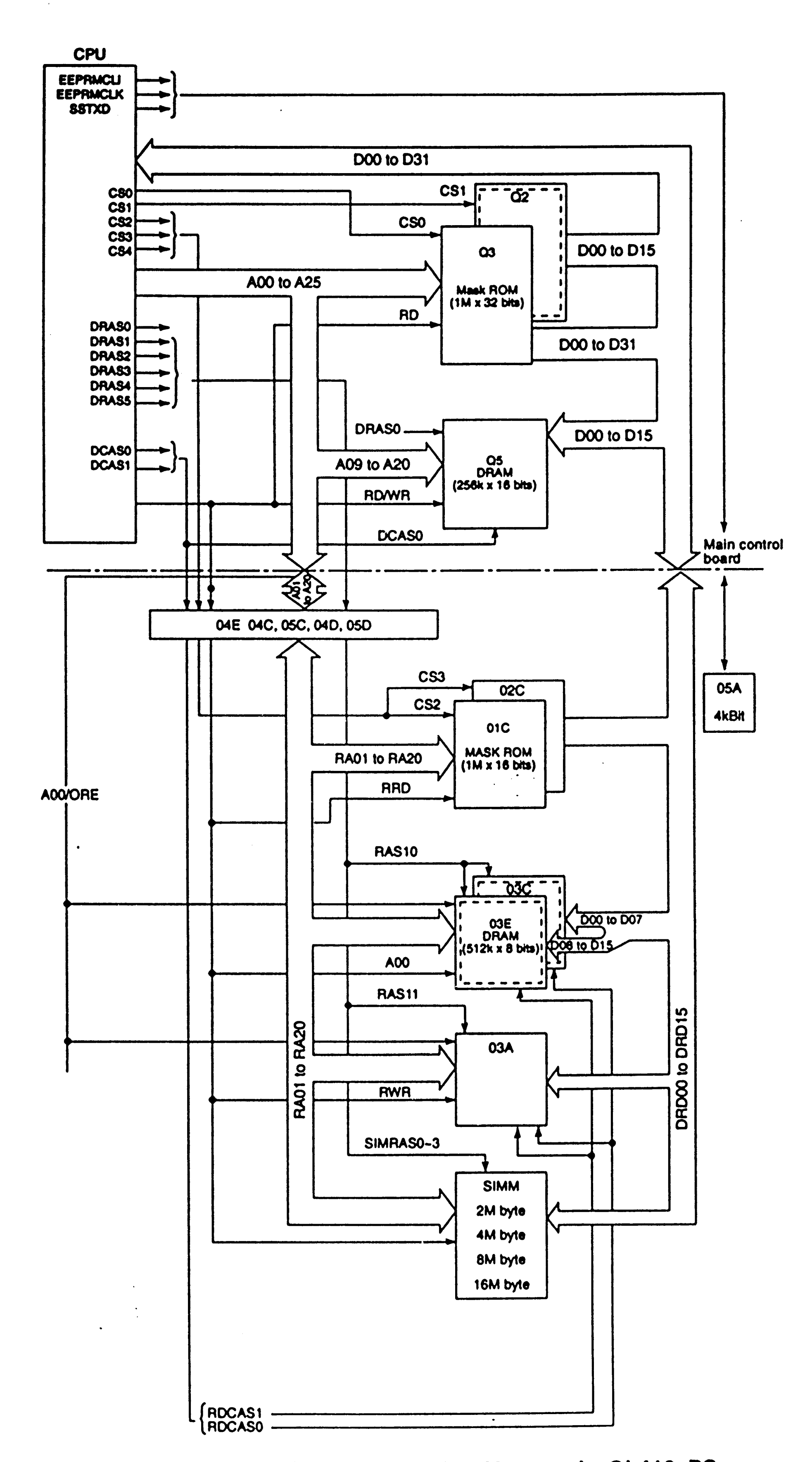
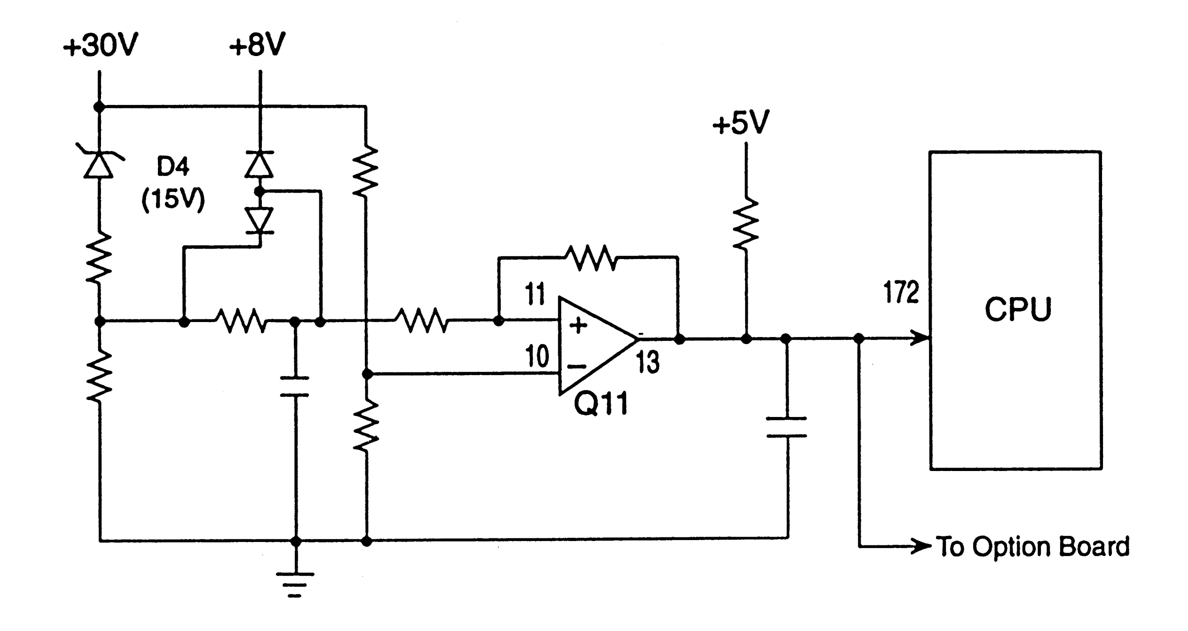
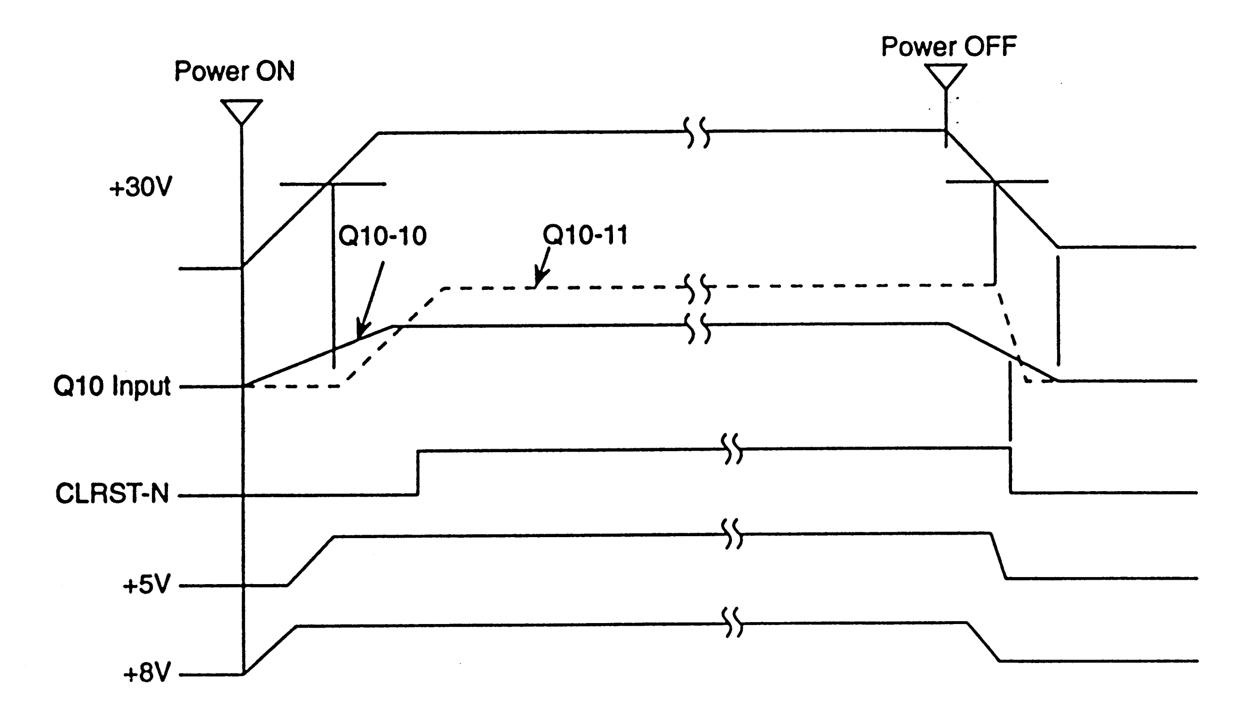


Figure 3-8 Block Diagram of CPU & Memory in OL410ePS

3.4 Reset Control

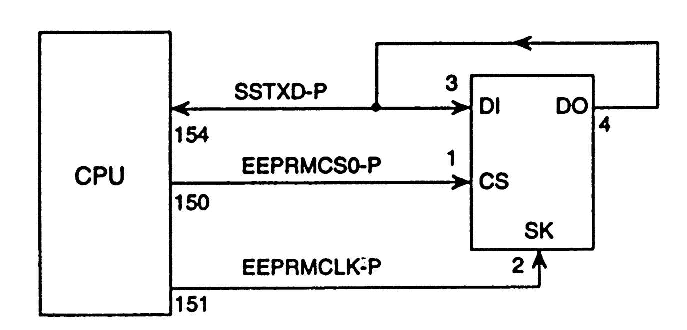
When power is turned on, a CLRST-N signal is generated by the rising sequence of +30V power supply.





3.5 EEPROM Control

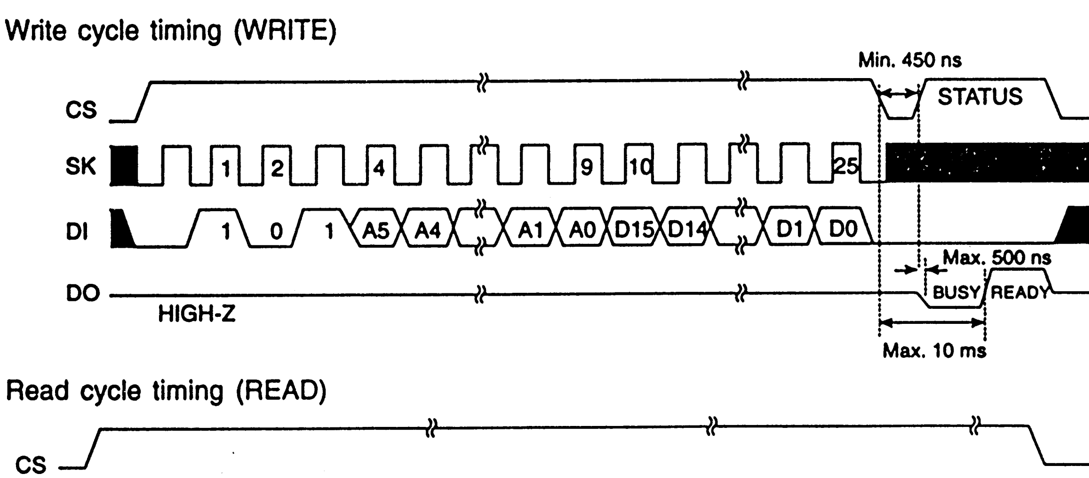
The BR93LC46A on the main control board is an electrical erasable/programmable ROM of 64-bit x 16-bit configuration. Data input to and output from the ROM are bidirectionally transferred in units of 16 bits through a serial I/O port (SSTXD-P) in serial transmission synchronized with a clock signal from the CPU.



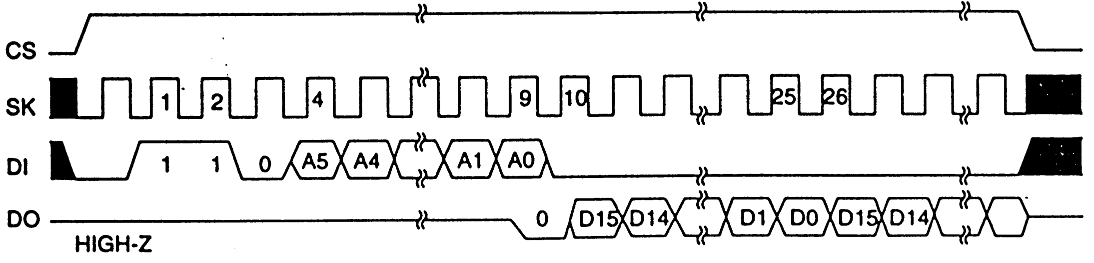
The EEPROM operates in the following instruction modes

Instruction	Start bit	Operation code	Address	Data
Read (READ)	1	10	A5 to A0	
Write Enabled (WEN)	1	00	11XXXX	
Write (WRITE)	1	01	A5 to A0	D15 to D0
Write All Address (WRAL)	1	00	01XXXX	D15 to D0
Write Disabled (WDS)	1	00	00XXXX	
Erase	1	11	A5 to A0	
Chip Erasable (ERAL)	1	00	10XXXX	

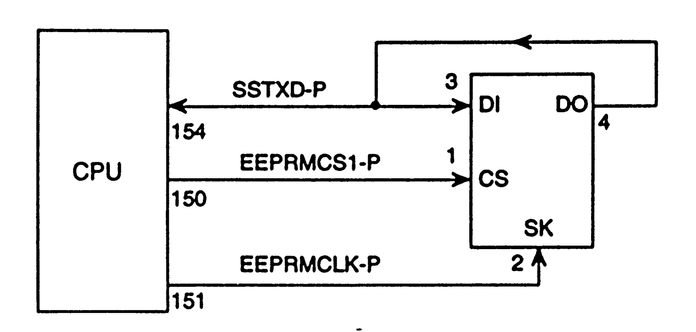
Write cycle timing (WRITE)



Read cycle timing (READ)



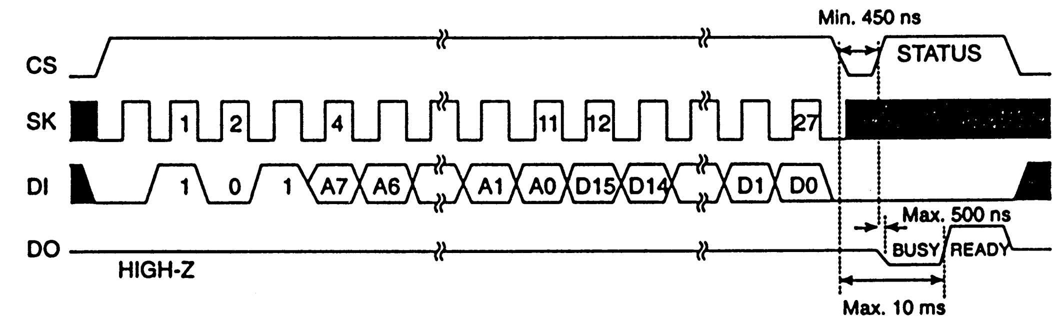
The NM93C66N on the PostScript board is an electrical erasable/programmable ROM of 256-bit x 16-bit configuration. Data input to and output from the ROM are bidirectionally transferred in units of 16 bits through a serial I/O port (SSTXD-P) in serial transmission synchronized with a clock signal from the CPU.



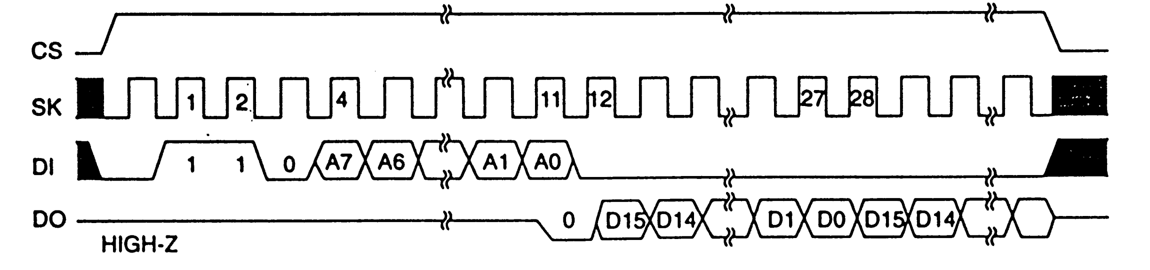
The EEPROM operates in the following instruction modes

Instruction	Start bit	Operation code	Address	Data
Read (READ)	1	10	A7 to A0	
Write Enabled (WEN)	1	00	11XXXXXX	
Write (WRITE)	1	01	A7 to A0	D15 to D0
Write All Address (WRAL)	1	00	01XXXXXX	D15 to D0
Write Disabled (WDS)	1	00	00XXXXXX	
Erase	1	11	A7 to A0	
Chip Erasable (ERAL)	1	00	10XXXXXX	

Write cycle timing (WRITE)

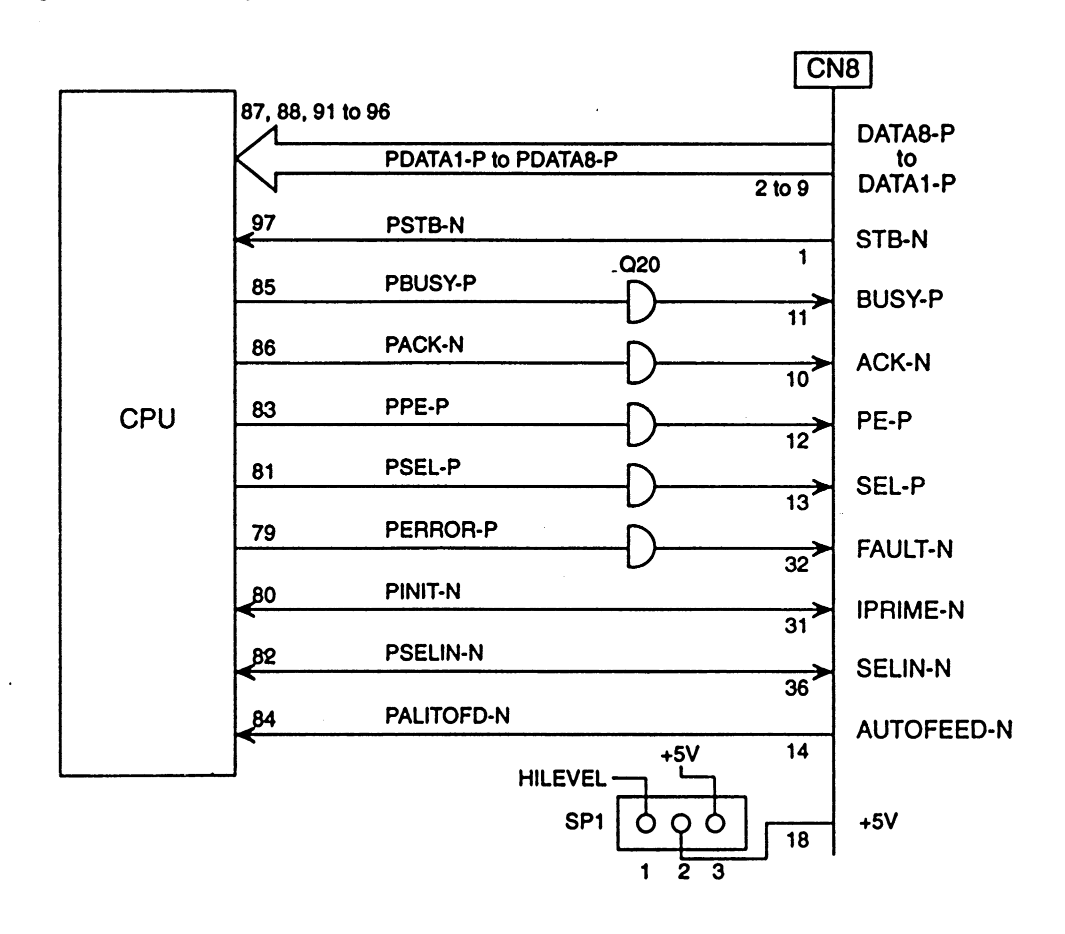


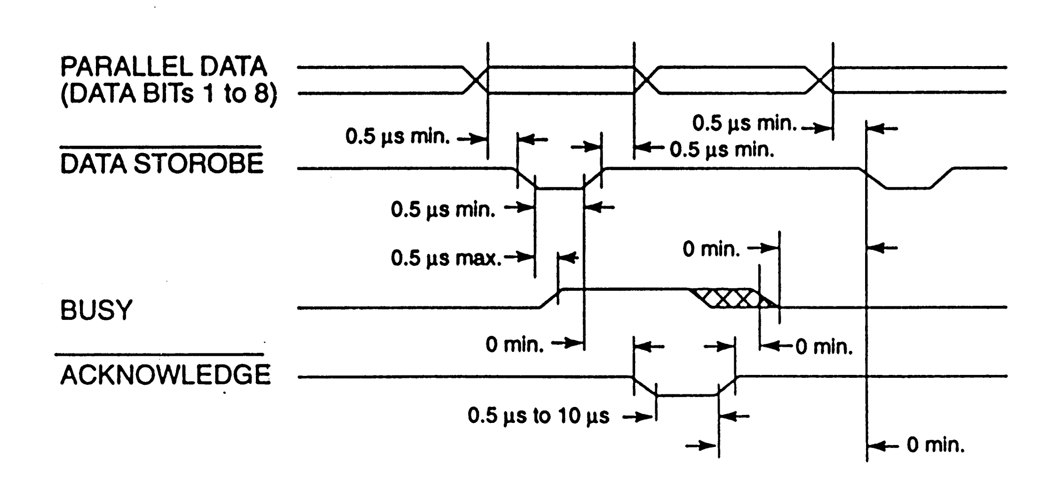
Read cycle timing (READ)



3.6 Centronics Parallel Interface

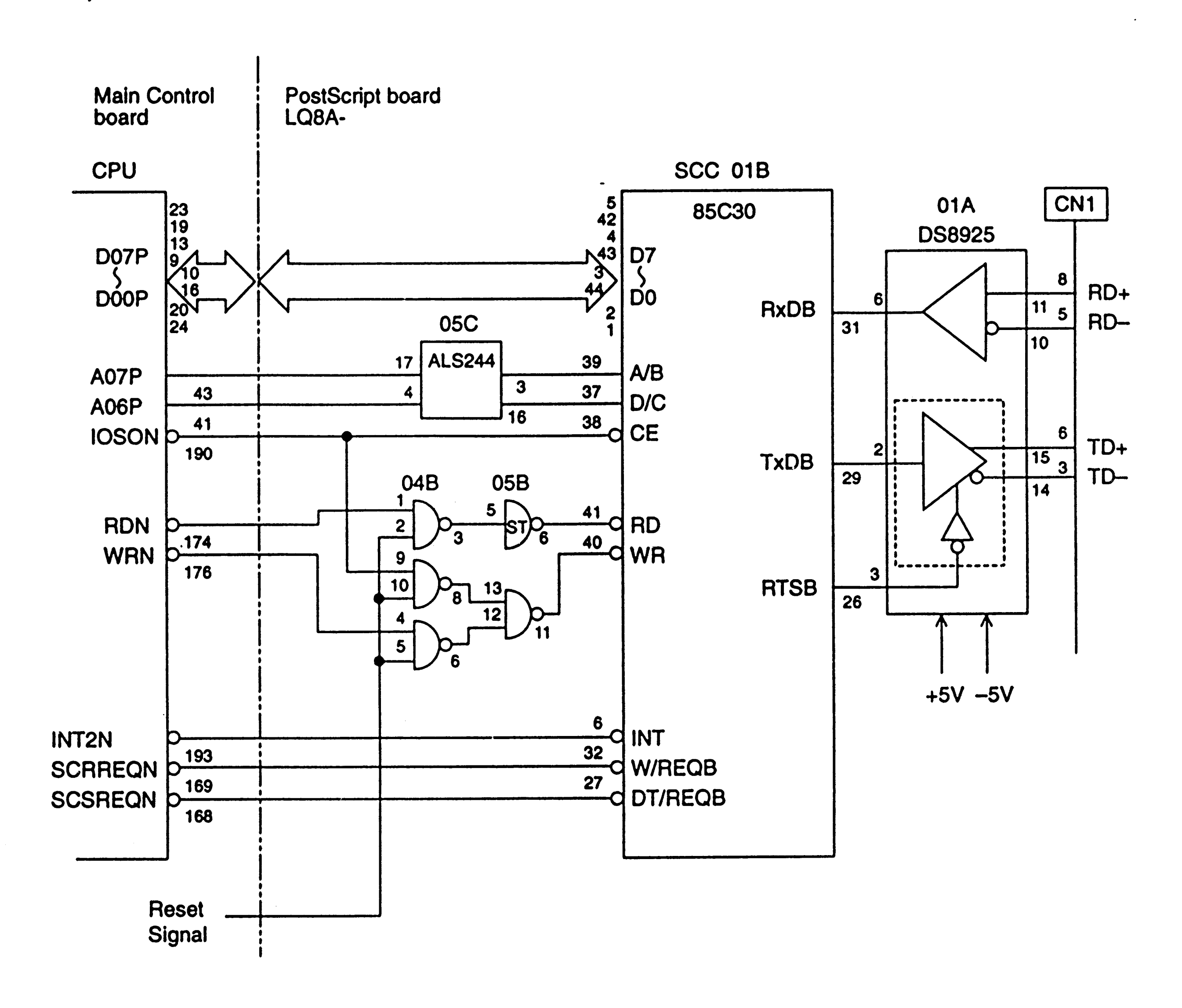
The CPU sets a BUSY-P signal to ON at the same time when it reads the parallel data (PDATA1-P to PDATA 8-P) from the parallel port at the fall of PSTB-N signal. Furthermore, it makes the store processing of received data into a receive buffer terminate within a certain fixed time and outputs an ACK-N signal, setting the BUSY-P signal to OFF.



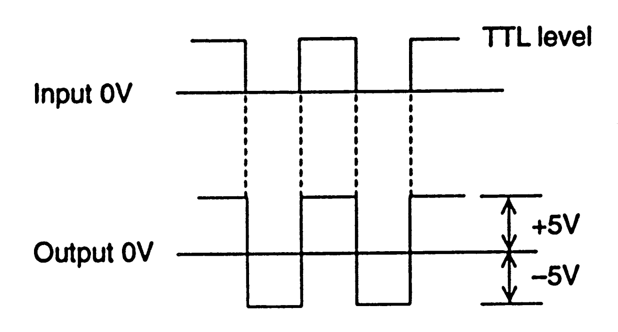


3.7 LocalTalk (RS-422) Interface

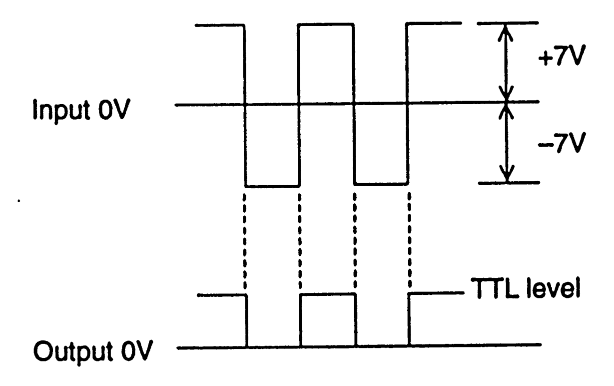
A balanced digital data transmission technology is used in this interface for the long distance serial data transmission. The balanced input signal (RD+ and RD–) is converted to TTL level signal by receiver IC(DS8925), then is read and de-serialized by SCC(85C30), and finally is read as 8-bit parallel data by CPU. The 8-bit parallel output data is written to SCC by CPU first, then the SCC serializes it and outputs it as TTL level serial signal, and driver IC(DS8925) converts it to balanced output signal (TD+ and TD–).



(1) Transmit signal level (26LS30)



(2) Receive signal level (26LS32)



The wave form depends on the protocol. In RS-422 protocol, it is same as RS-232C protocol except that it does not have ready/busy control signal line.

In LocalTalk protocol, SDLC protocol is used to transmit and receive the data. Fig. 3-11 shows an example of the one SDLC output frame. RTSB signal is used to isolate the output signal line from the LocalTalk network when it is not used.

Fig. 3-12 shows the data transmission/reception between CPU and SCC.

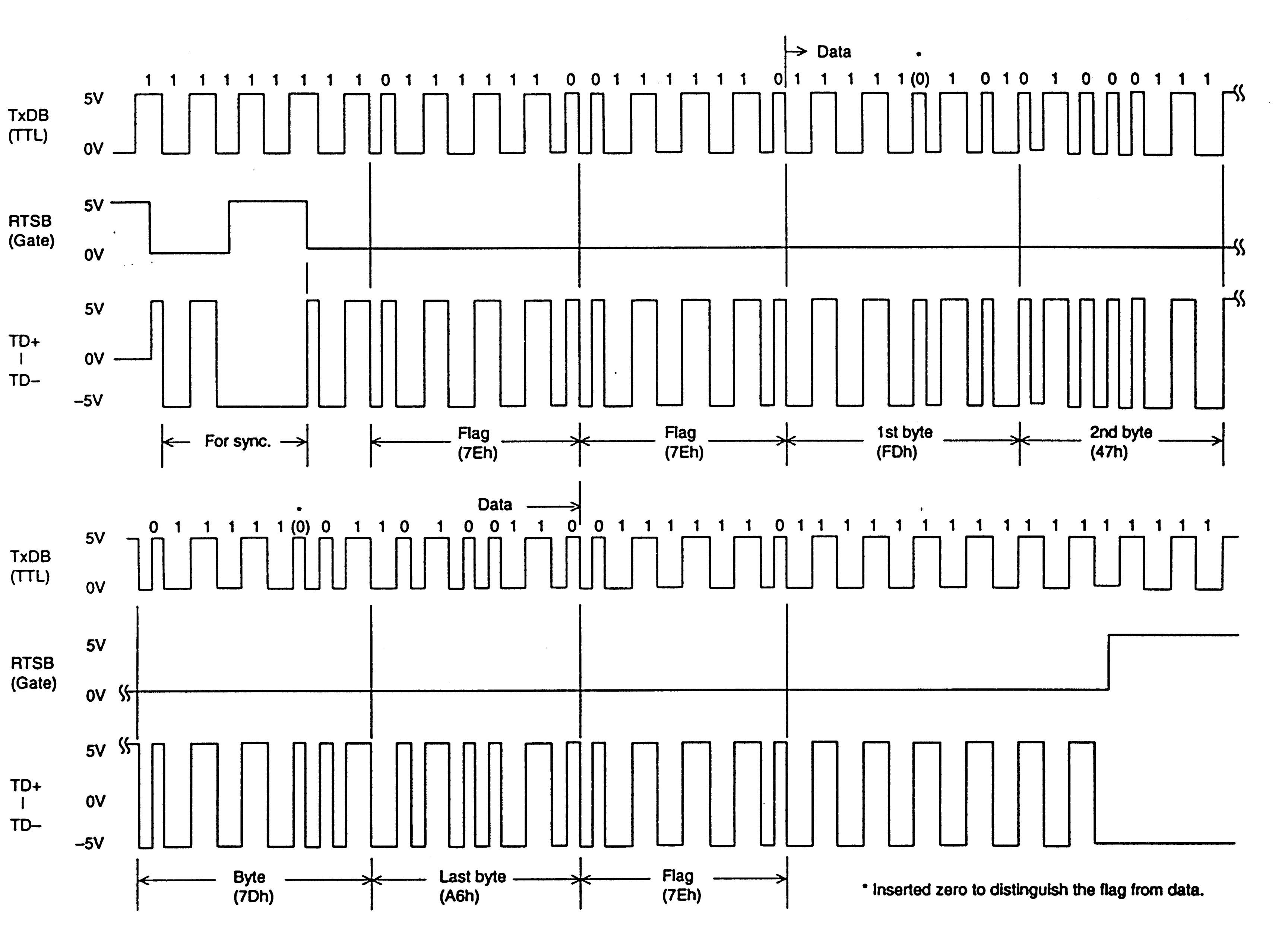
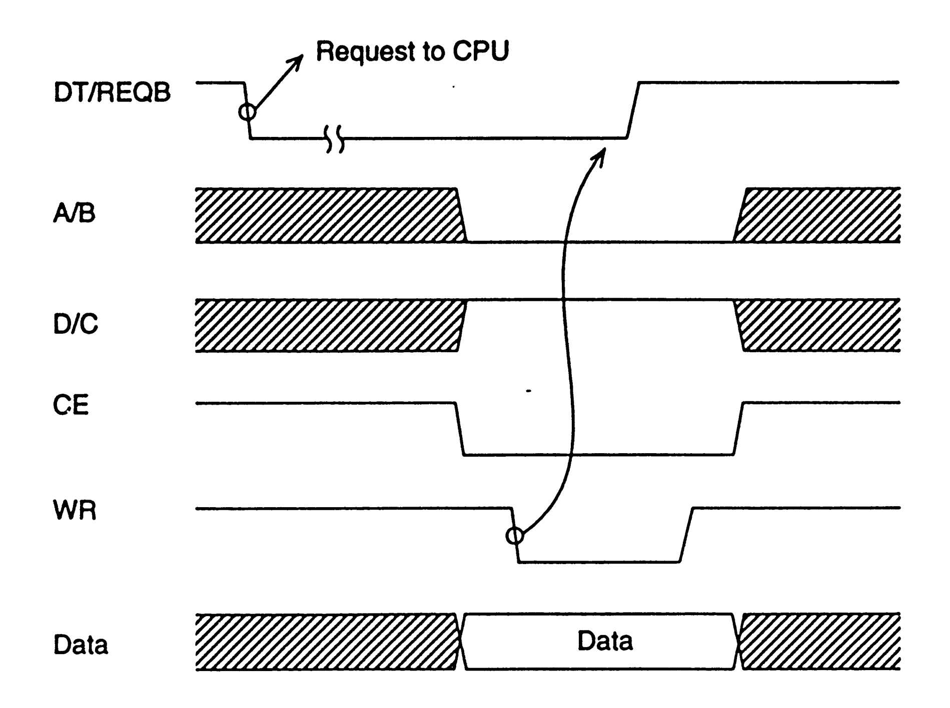


Figure 3-11 SDLC frame

(1) CPU → SCC Data write



(2) SCC → CPU Data read

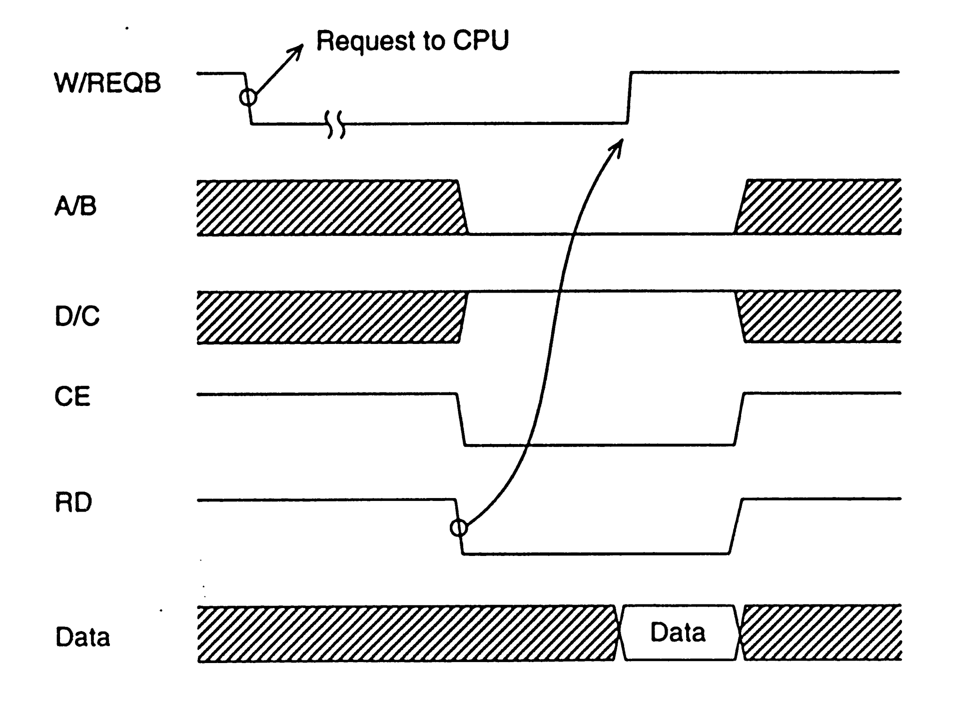
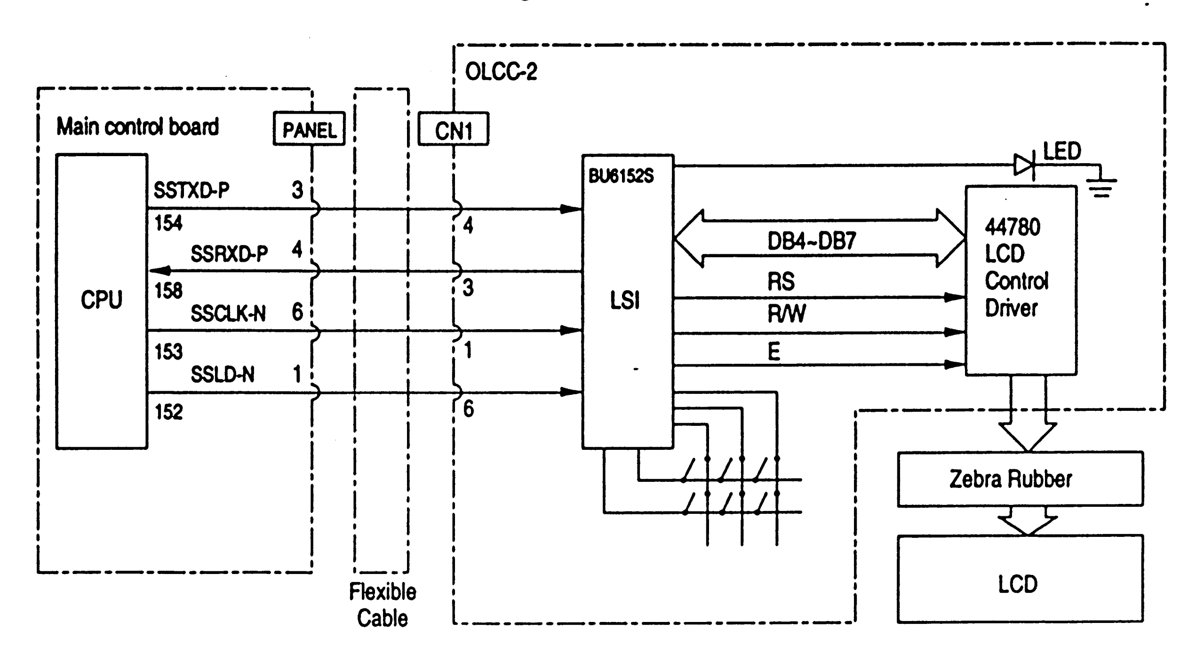


Figure 3-12 Data Transmission/Reception between CPU and SCC

3.8 Operator Panel Control

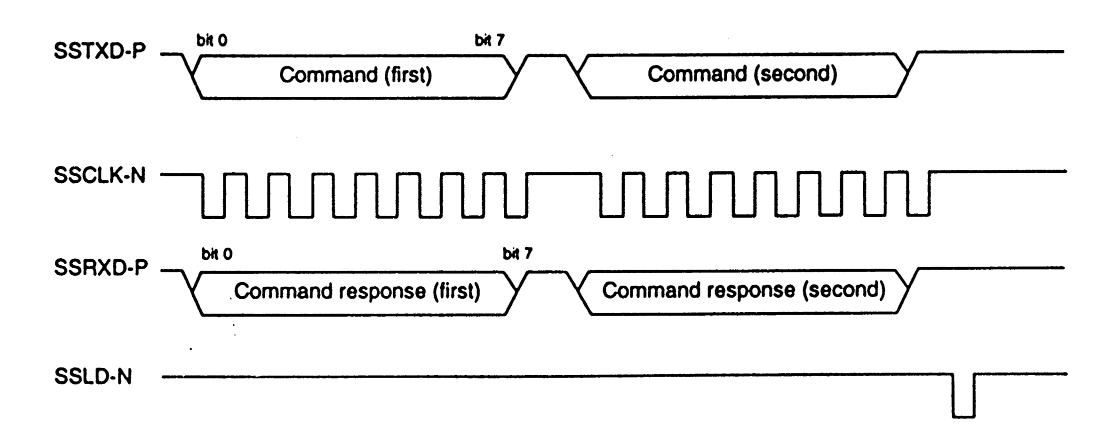
The operator panel consists of the following circuits.



1) BU5148S (LSI)

This LSI is connected to a clock synchronous serial port of the CPU. It controls switch data input, LED data output and LCD data input/output according to the commands given by the CPU. The CPU sends the 2-byte (16-bit) command (SSTXD-P) together with the shift clock signal (SSCLK-N) to the LSI and then makes a predetermined input/output control if the command decoded by the LSI is found to be a normal command.

On receiving a command sent from the CPU, the LSI, synchronizing with the serial clock of the command, returns a 2-byte command response to the CPU.

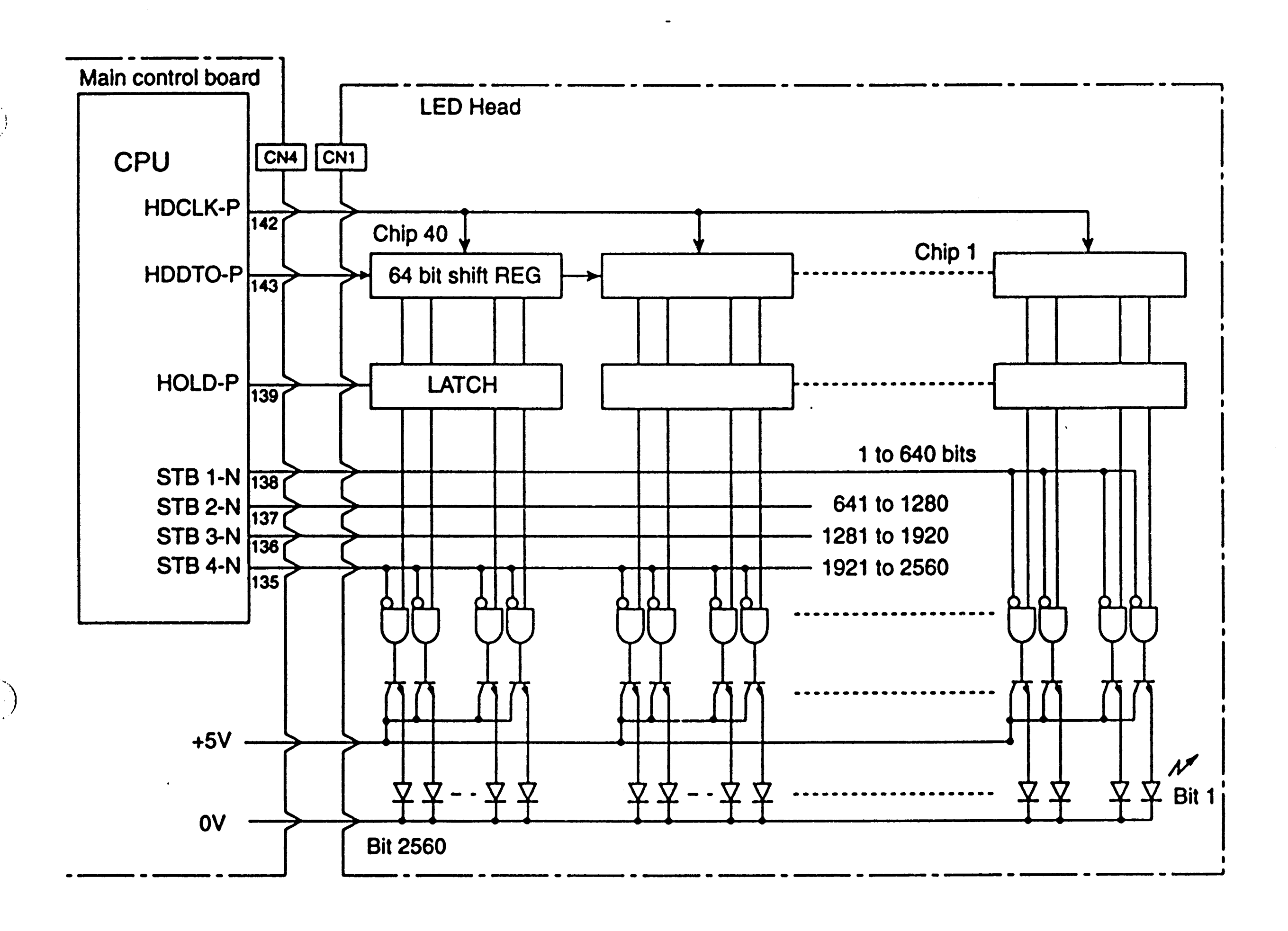


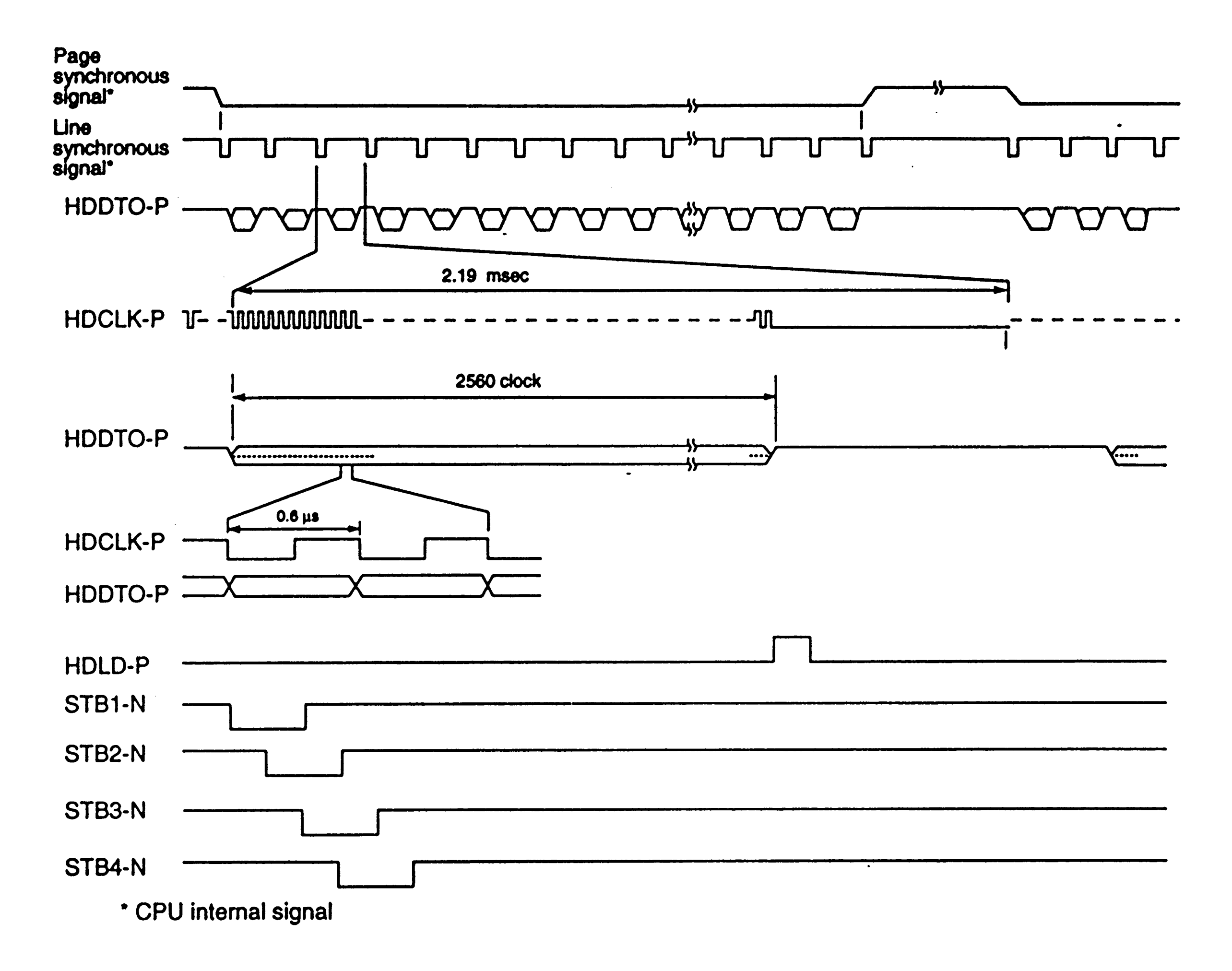
3.9 LED Head Control

When a paper form is made to arrive at the data write position on print start, the sending of data to the LED head starts as synchronized with the page synchronous signal/line synchronous signal (CPU internal signal).

Bit image data developed on the raster buffer of a memory are DMA-transferred to the register of a video interface controller (CPU built-in) and then sent to the shift register of the LED head in a serial transmission synchronized with the HDCLK-P signal by the HDDTO-P signal.

When 1-dot line data (2560 bits) is completely shifted, it is latched by means of the HDLD-P signal, causing LEDs to be driven by means of the STB1-N to STB4-N signals in 4-time division.



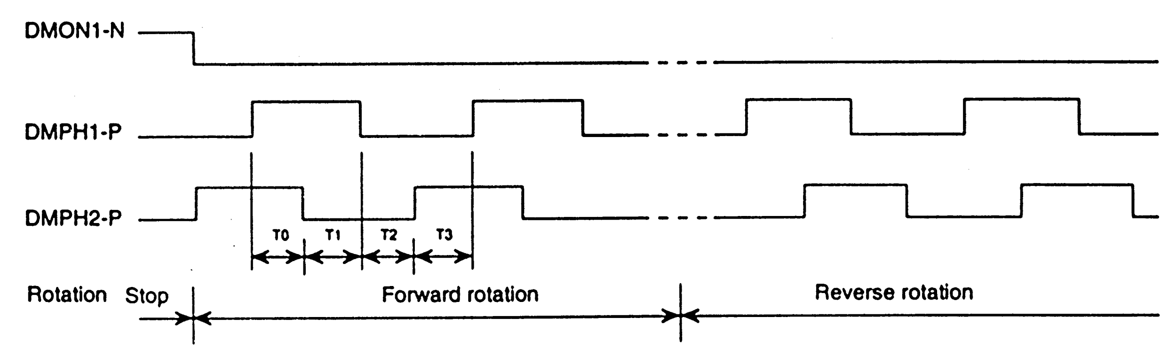

Page synchronous signal*
Line synchronous signal*
HDDTO-P
2.19 msec
HDCLK-P
2560 clock
HDDTO-P
0.6 µs
HDCLK-P
HDDTO-P
HDLD-P
STB1-N
STB2-N
STB3-N
STB4-N
* CPU internal signal

3.10 Motor Control

A registration motor and a drum motor are driven by means of control signals from the CPU and a driver IC.

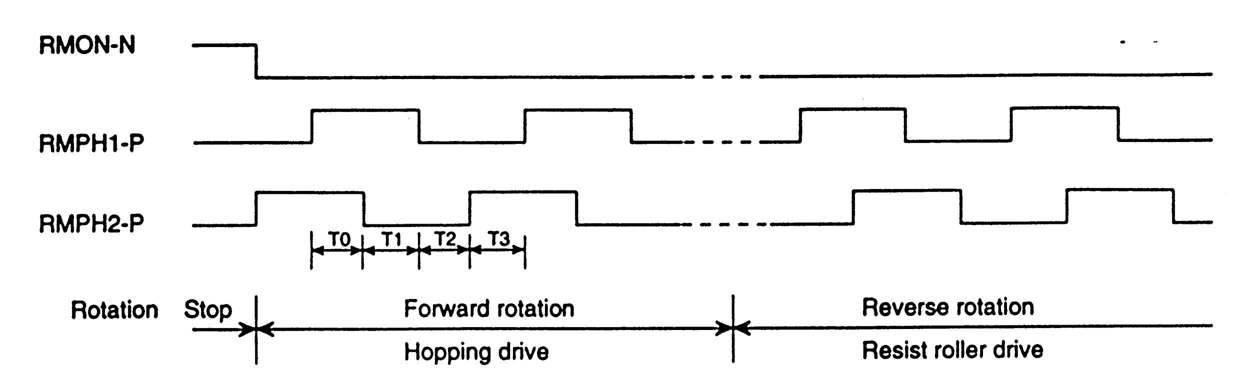


(1) Drum motor



Operation at normal speed: T0 to T3 = 1.094 ms

(2) Registration motor



Operation at normal speed: T0 to T3 = 1.094 ms

(3) Drive control

Time T0 to T3 determines the motor speed, while the phase different direction between phase signals DMPH1-P and DMPH2-P (RMPH1-P and RMHPH2-P) determines the rotation direction. DMON1-N and RMON-N signals control a motor coil current. According to the polarity of the phase signal, the coil current flow as follows:

1) +30V → SW → motor coil → $\overline{\text{SW}}$ → resistor → earth, or,

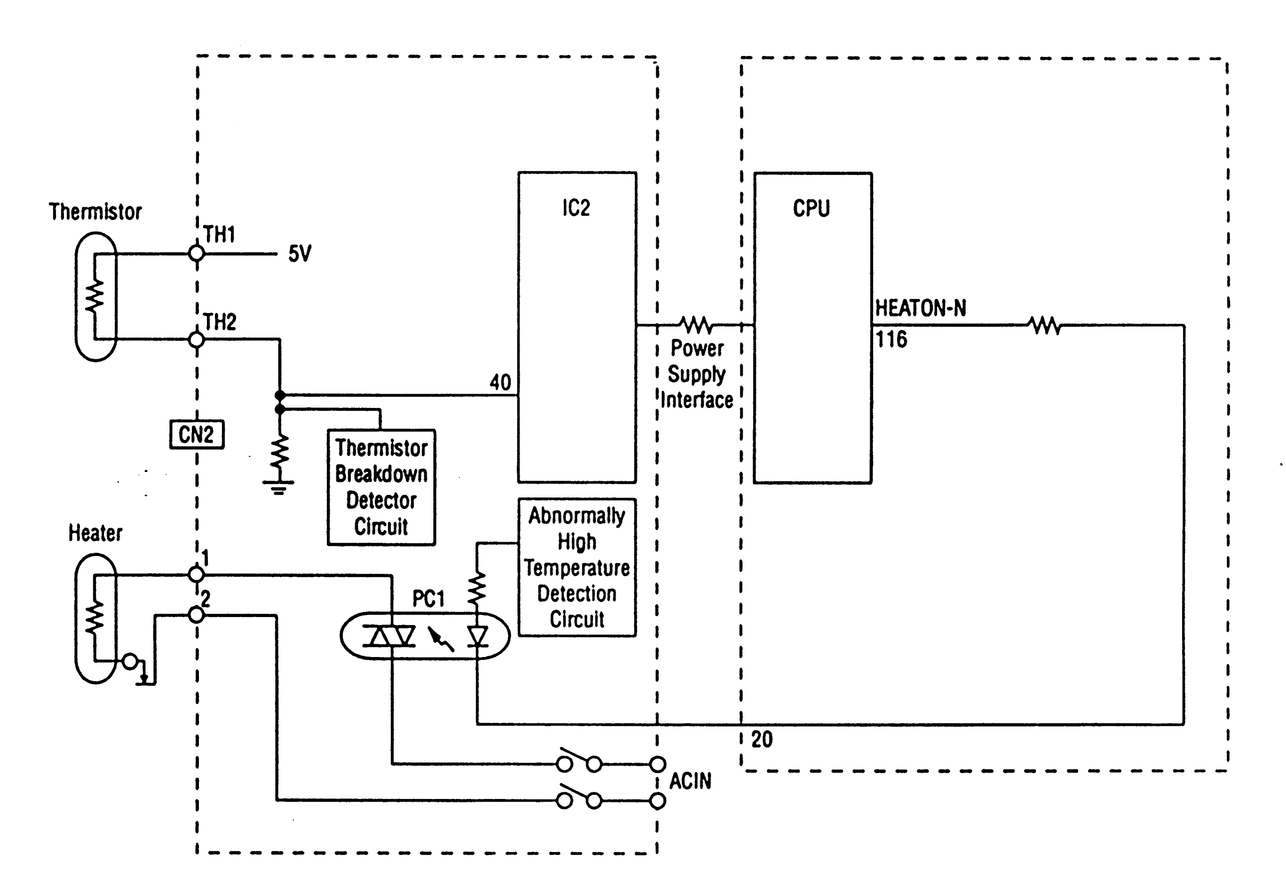
2) +30V → $\overline{\text{SW}}$ → motor coil → SW → resistor → earth

The drop voltage across the resistor is input to comparator, where it is compared with a reference voltage. If an overcurrent flows, a limiter operates to maintain it within a certain fixed current.

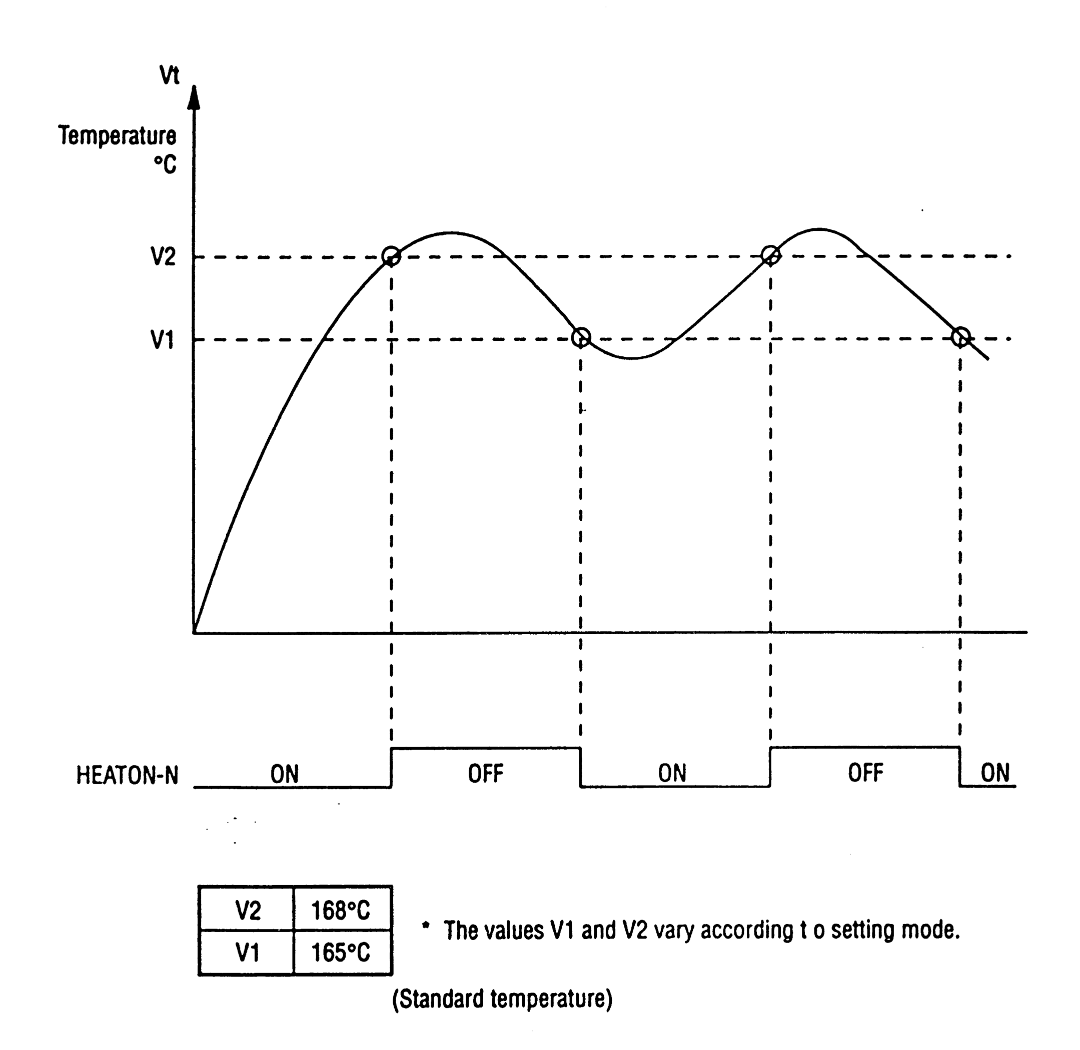
3.11 Fuser Temperature Control

For the temperature control by heater control, the variation in the resistance of thethermistor is A/D converted in IC2 and the resultant digital value is read and transferred to the CPU. The CPU turns on or off the HEATON-N signal according to the value of the signal received from IC2 to keep the temperature at a constant level.

Immediately after the power is turned on, the thermistor is checked for short circuit and breakdown. If the thermistor is shorted, the A/D converted value shows an abnormally high temperature, so that the short circuit can be detected. If the breakdown of the thermistor occurs, the A/D converter value shows the normal temperature. In this case, the thermistor breakdown can be detected by the sequence shown at the end of this section. If the heater is overheated, 5V supply is turned off when the resistance of the thermistor is detected to be exceeding the predetermined value.



The temperature control is described below.



V2	168°C
V1	165°C

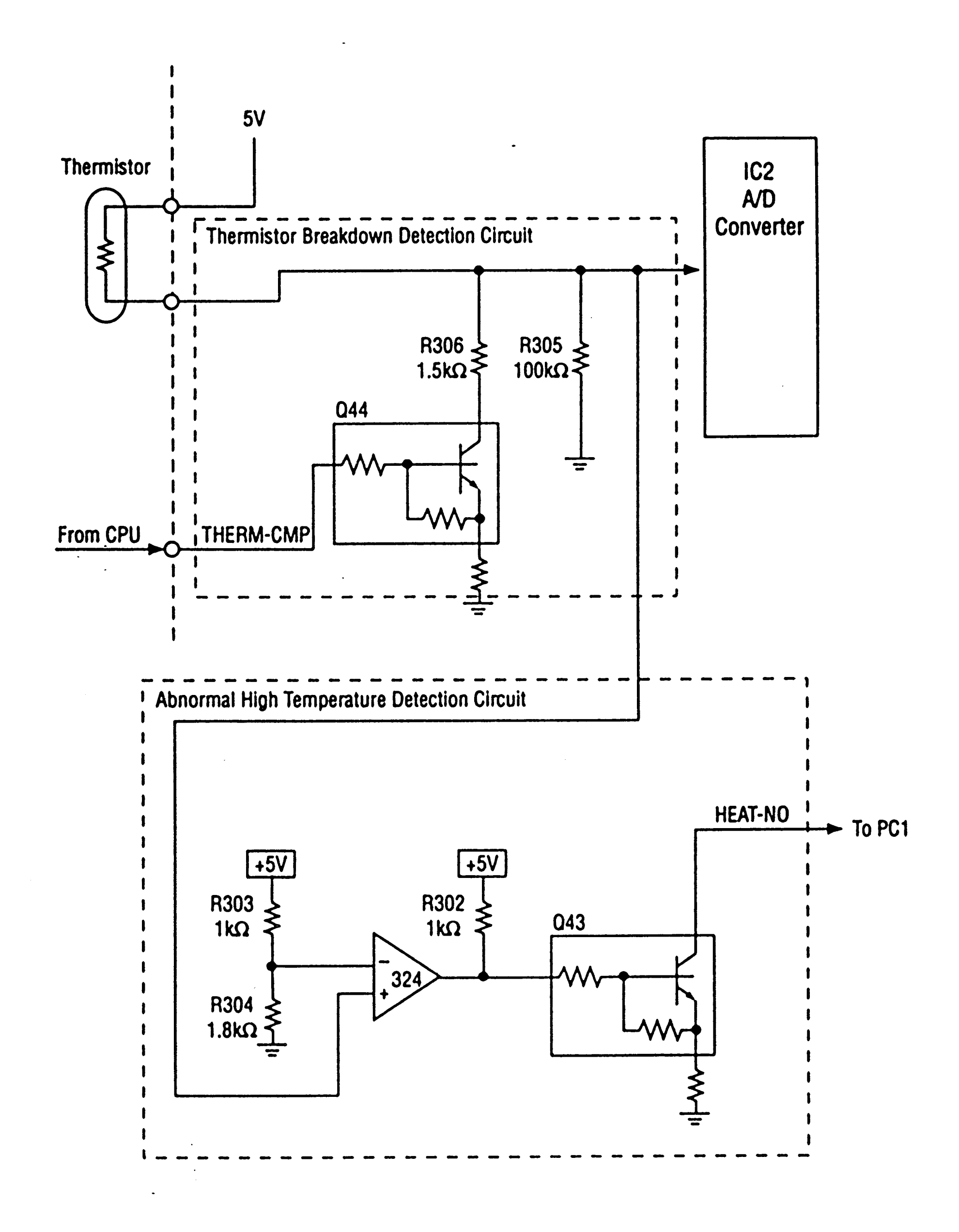
(Standard temperature)

* The values V1 and V2 vary according t o setting mode.

When Vt rises to V2 or more, the heater is turned of (by setting HEATON-N signal to LOW). When Vt drops to V1 or less, the heater is turned on (by setting HEATON-N signal to HIGH). In this way, the temperature can be kept within the predetermined range.

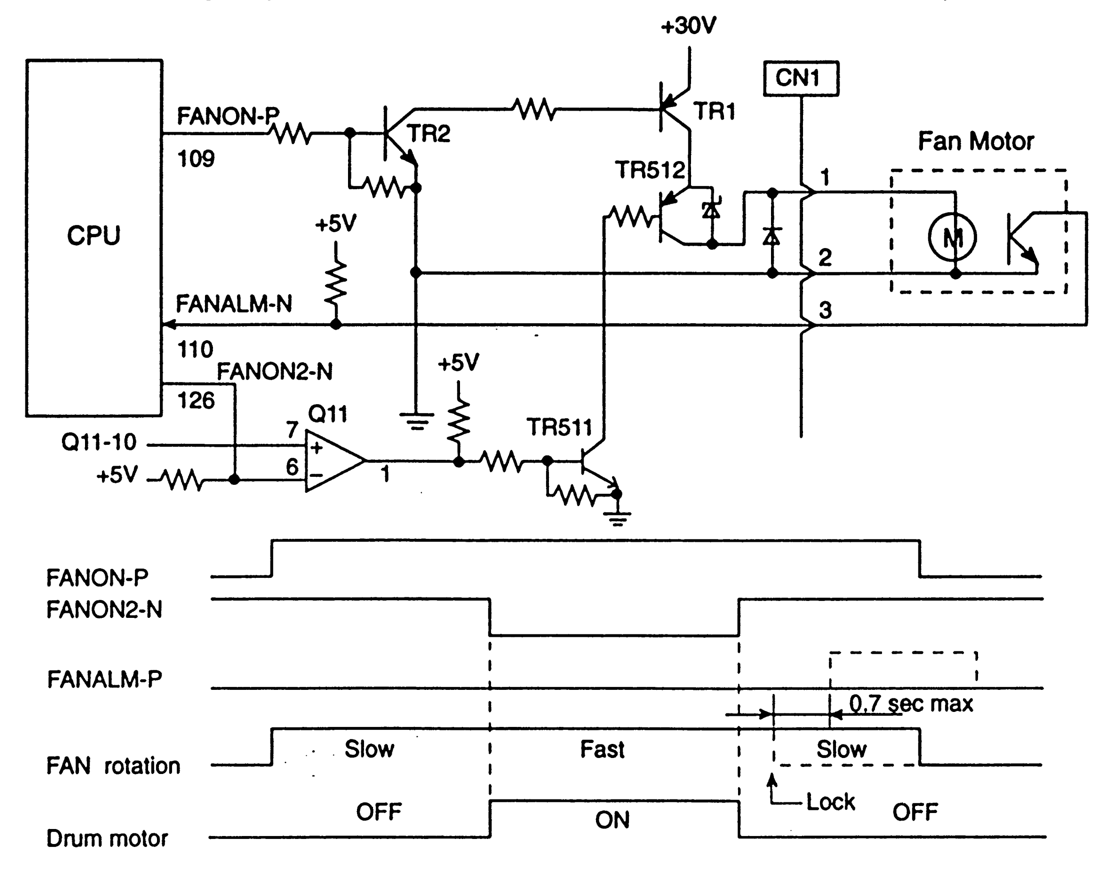
For heater breakdown detection, the heater must first be turned on. When a temperature rise which corresponds to the switching on of the heater does not occur, then a heater breakdown is detected. To shorten the breakdown detection time, the following circuit is used. Immediately after the power is turned on, the thermistor is checked and THERM-CMP signal is turned on to turn the transistor Q44 on. The reading resolution is increased through the variation of the thermistor resistance value.

If, for whatever reason, temperature control fails and the temperature rises abnormally, the abnormal high temperature detection circuit shown below forcibly cuts the power supply to the fuser.



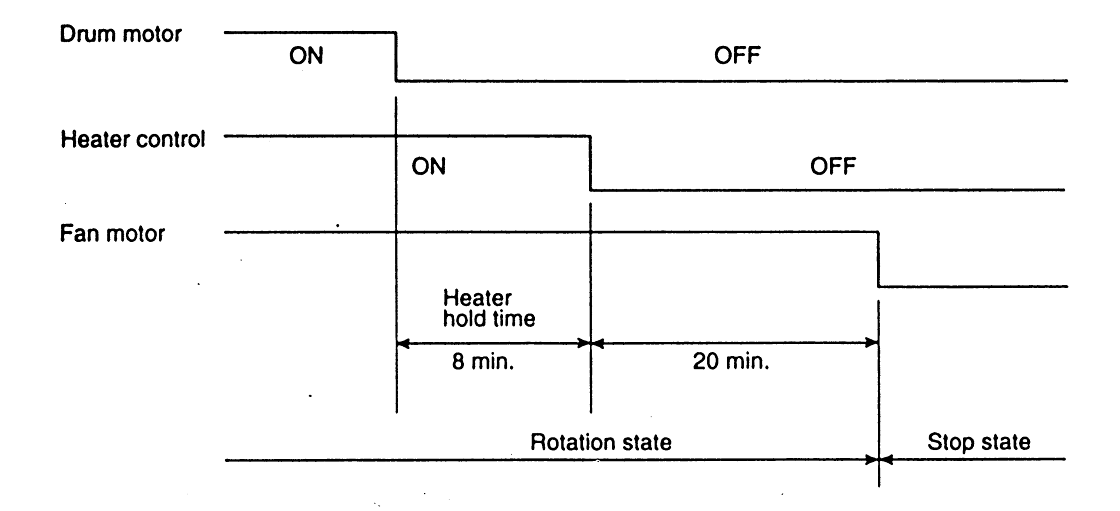
3.12 Fan Motor Control

The stop/rotation of the fan motor is controlled by a FANON-P signal. When the fan motor rotates normally, a FANALM-P signal generated in the hole element built in the fan motor is input to the CPU.



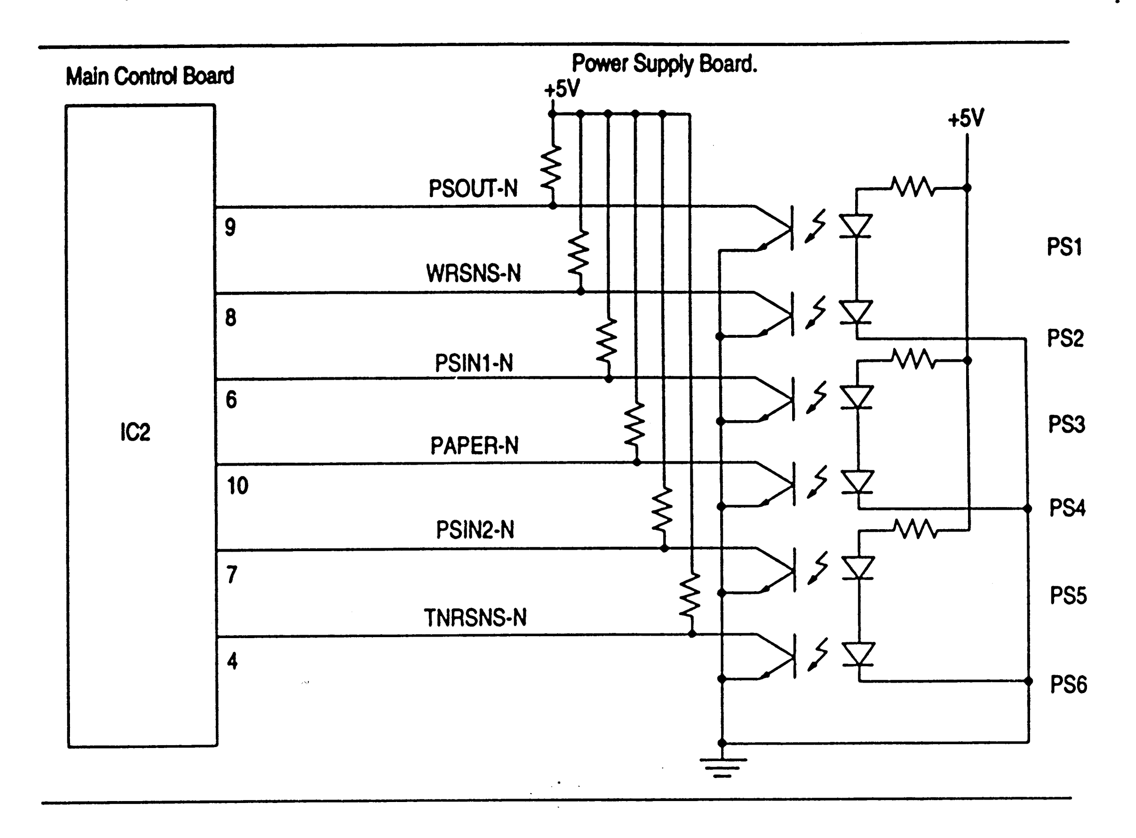
Fan motor start: Initial request, heater on, print start request

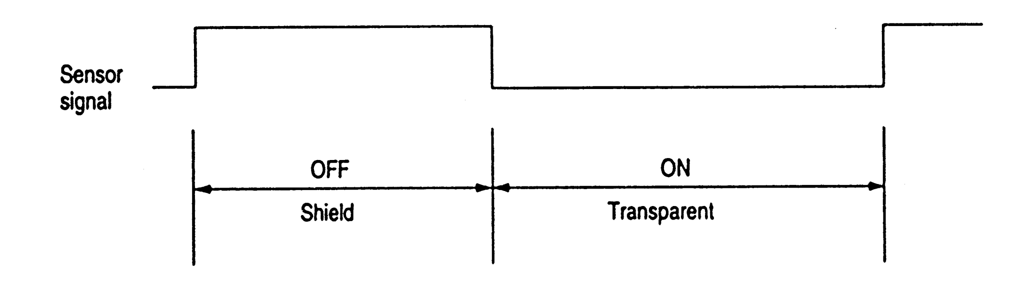
Fan motor stop:
- The motor immediately stops when an engine error or a fan error occurs.
- The motor stops 20 minutes after the occurrence of a paper jam, size error, or fuse error.
- The motor stops in the power save mode as below.



3.13 Sensor Control

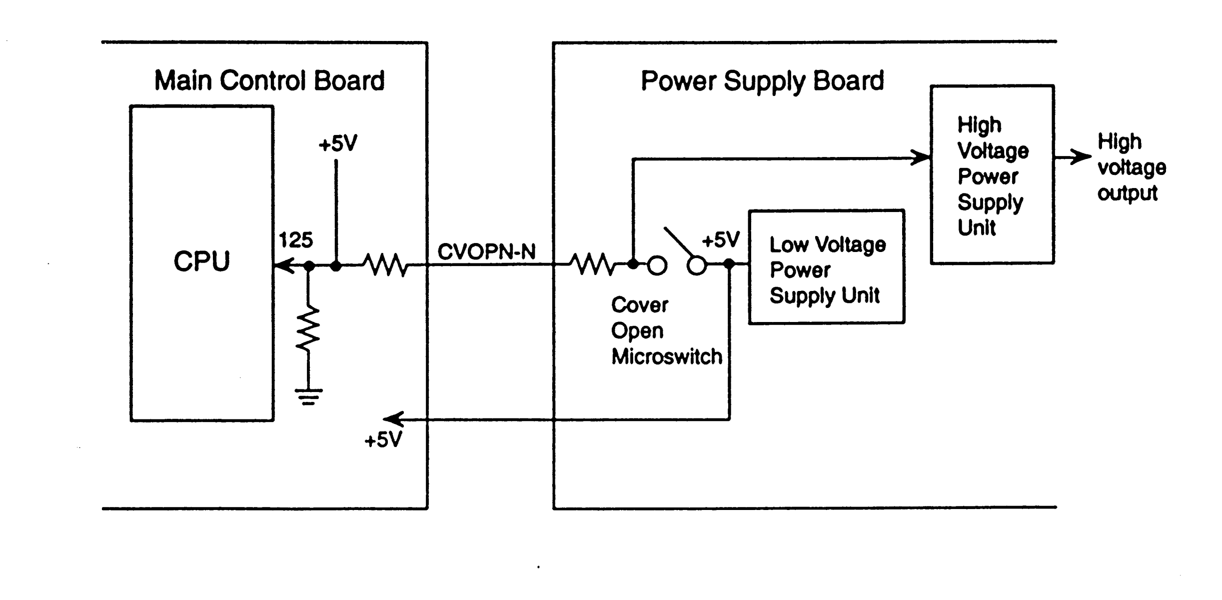
The CPU supervises the state of each sensor every 40 ms.

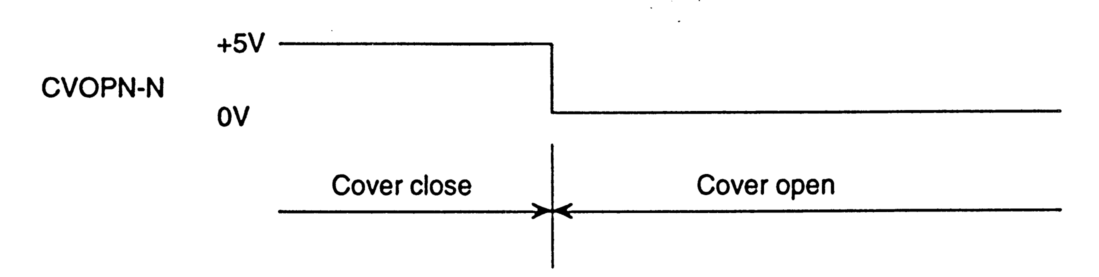




3.14 Cover Open

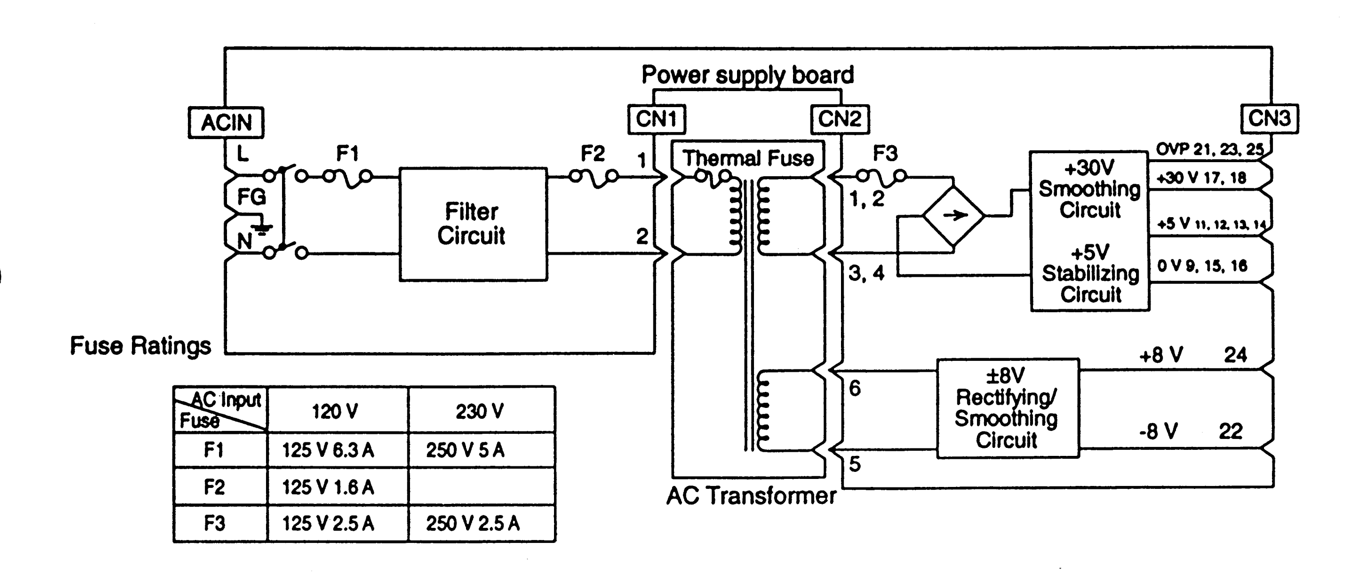
When the cover is opened, a cover open microswitch is opened. This makes a CVOPN-N signal low, thereby the CPU detects the open state. Furthermore, opening the cover stops applying a +5V power to the high voltage power supply unit, resulting in stopping all high voltage outputs.





3.15 Power Supply Board

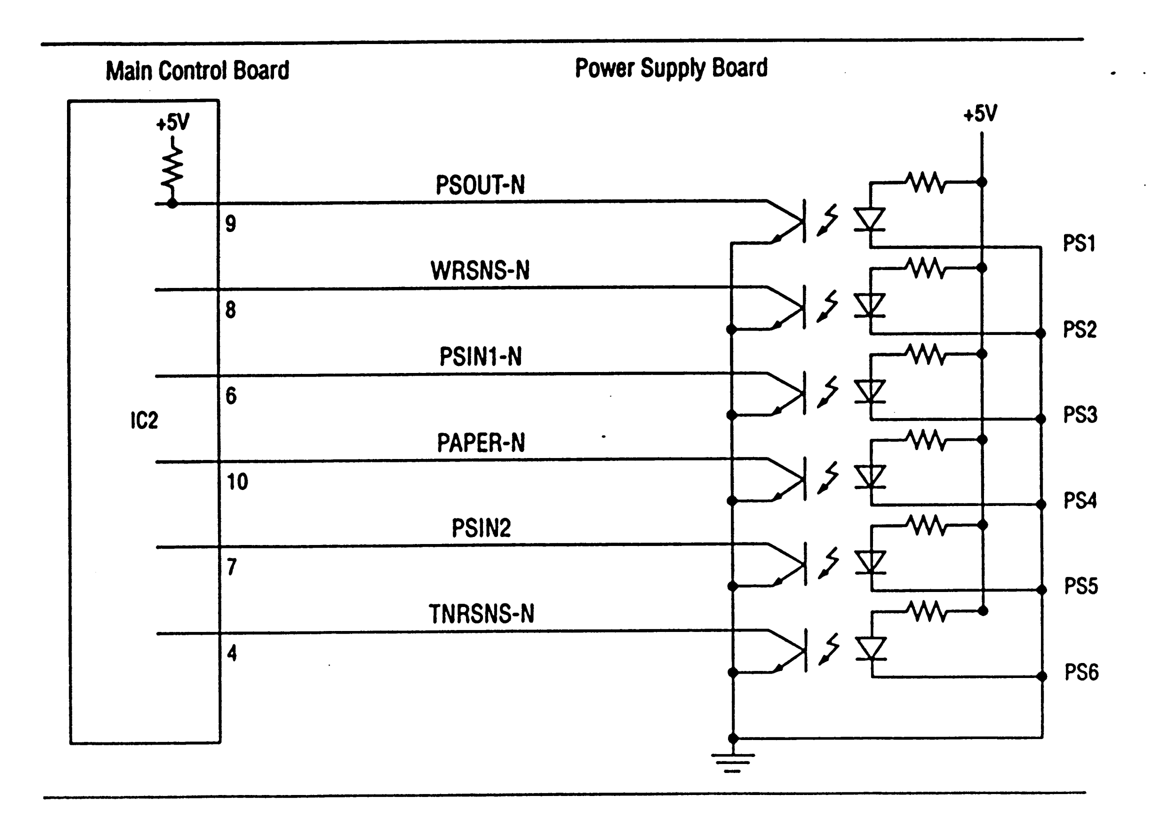
(1) Low voltage power supply
An AC power from an inlet is input to a transformer via fuses, AC switch and noise filter and then lowered to a 28 VAC power and a 10 VAC power. The 28 VAC power is converted to a +30 VDC output through a rectifying/smoothing circuit. A +5 VDC output is derived from the resultant +30 VDC power through a regulation circuit. The 10 VAC power is converted to a +8 VDC output and a -8 VDC output through a rectifying/smoothing circuit.

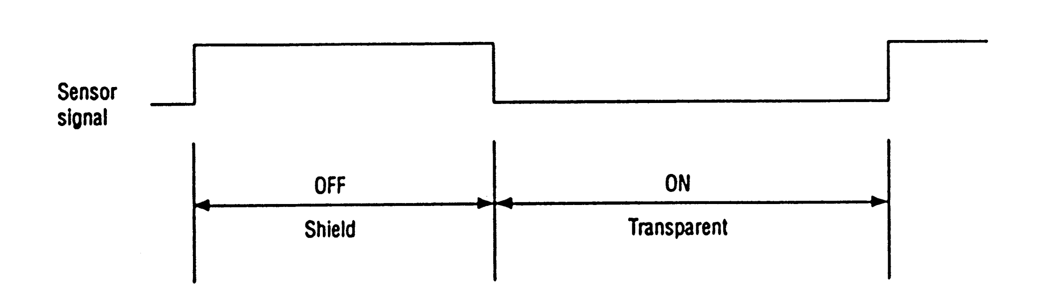


Fuse Ratings

AC Input / Fuse	120 V	230 V
F1	125 V 6.3 A	250 V 5 A
F2	125 V 1.6 A	
F3	125 V 2.5 A	250 V 2.5 A

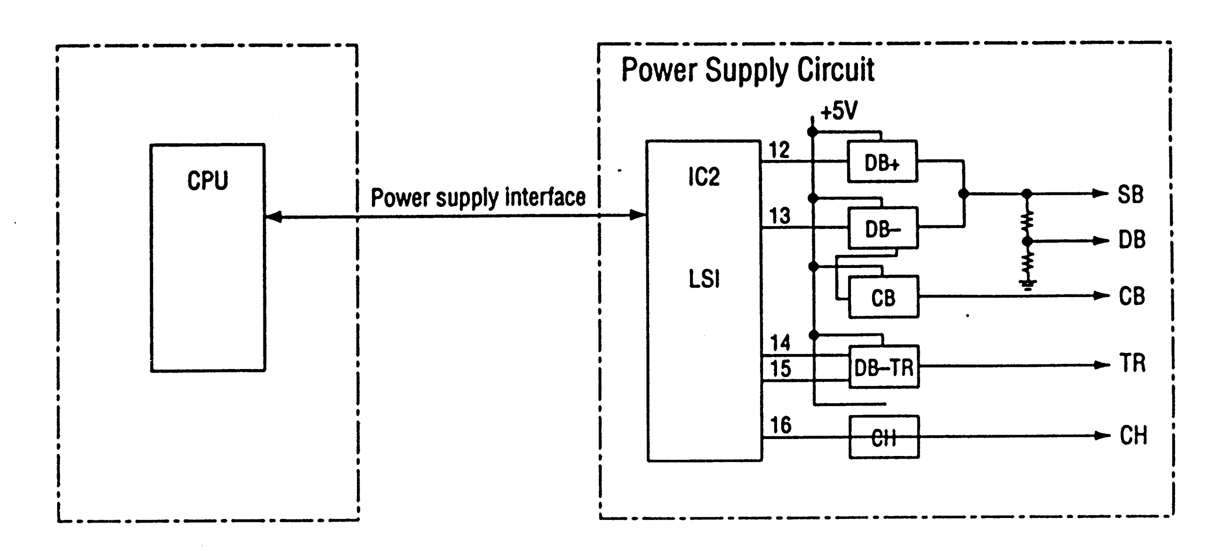
(3) Sensor control





(2) High voltage power supply

This high-voltage power supply circuit receives the high-voltage generation timing control command that is transmitted in serial through the power supply interface from the control section. It decodes this command by LSI (IC2) and outputs high-frequency pulses to the corresponding high-voltage generating circuits through pins 12, 13, 14, 15 and 16 of LSI (IC2). It supplies +38V to each high-voltage generating circuit as the source voltage. When the cover is open, the supply of +5V is interrupted to interrupt all the high-voltage outputs. The relationship between the high-frequency pulse output pins and the high voltage outputs is shown in the following table.



High-voltage outputs / High-frequency pulse output pins	SB	DB	CB	TR	CH
12	hv	+300V	+240V		
13	–450V	-300V	–400V		
14				+1.2KV	
15				–0.75KV	
16					-1.35KV

Part with slant line: no output

3.16 Option Tray Control

Two kinds of option trays, Second Tray and Multi purpose Feeder, can be connected to the printer individually or at same time by daisy chain. The trays are distinguished by two digit ID numbers. Fig. 3-13 shows the connection and the block diagrams.

The option trays and the printer communicate with each other through bi-directional clock synchronized serial interface. Fig. 3-14 shows its time chart, the printer always sends a command first, then each option tray interpret it. Because the command contains an ID, the selected option tray takes appropriate actions, then sends back a reply. The command and reply are transmitted back and forth on OPTSD-P signal line by synchronizing OPTSCLK-N clock signal which is sent by the printer. The printer knows the timing when it outputs the clock for the reply by sensing OPTSDR-N signal which is turned to zero by the option tray when it is ready for the reply.

The option tray's paper feeding action is triggered by a command sent by the printer. When the tray detects a signal on OPTPSIN-N signal line, which indicates the paper reaches a input sensor in the printer, the tray stops the paper feeding after carrying out the paper feeding according to the predetermined steps which have been downloaded from the printer at power-up time. Fig. 3-15 shows the time chart.

Status of the option trays such as no paper cassette, paper out and cover open, are informed to the printer though a reply in response to a status inquiry command.

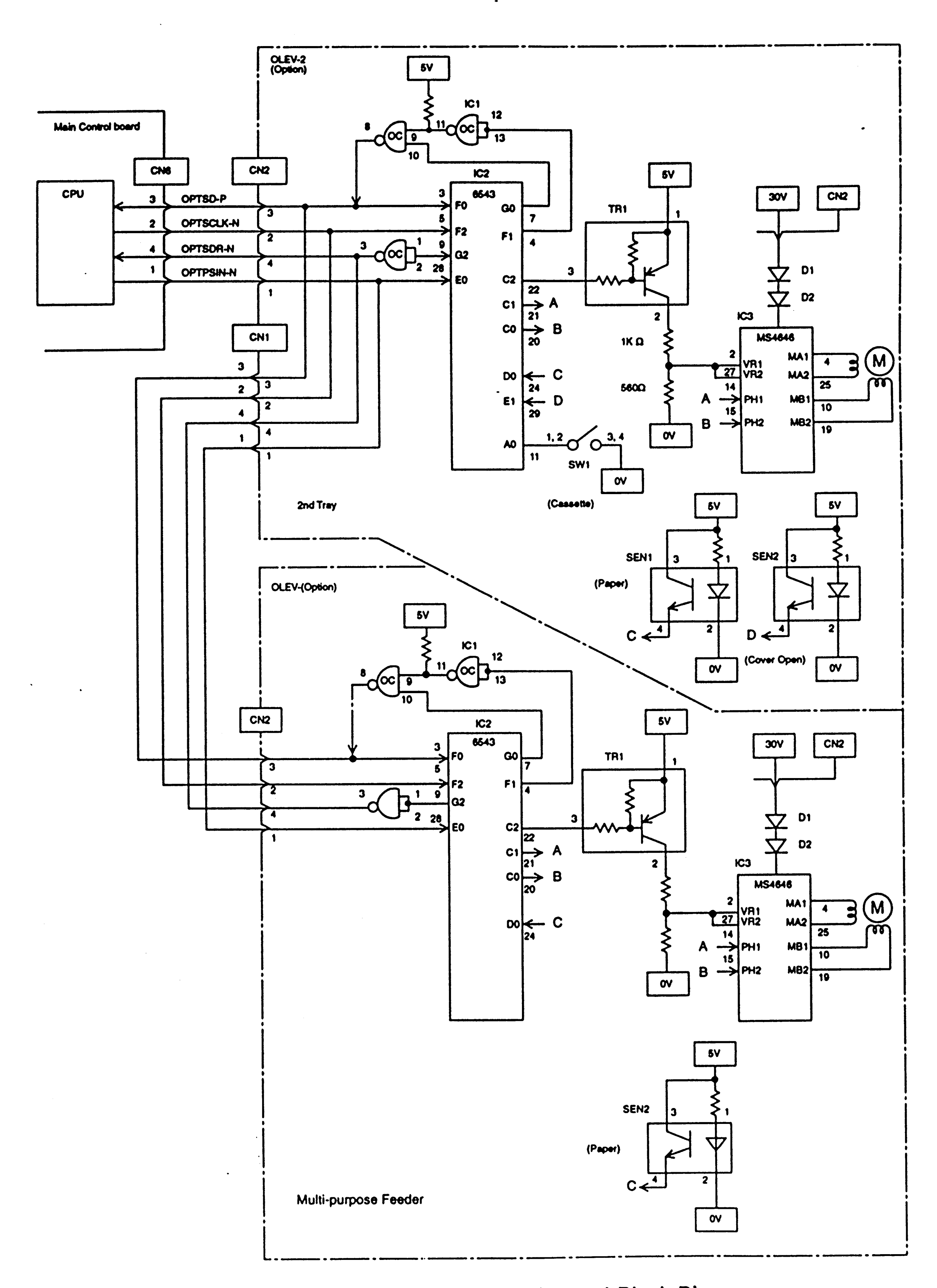


Figure 3-13 Option Tray Connection and Block Diagram

Option Tray Control Serial Interface Time Chart

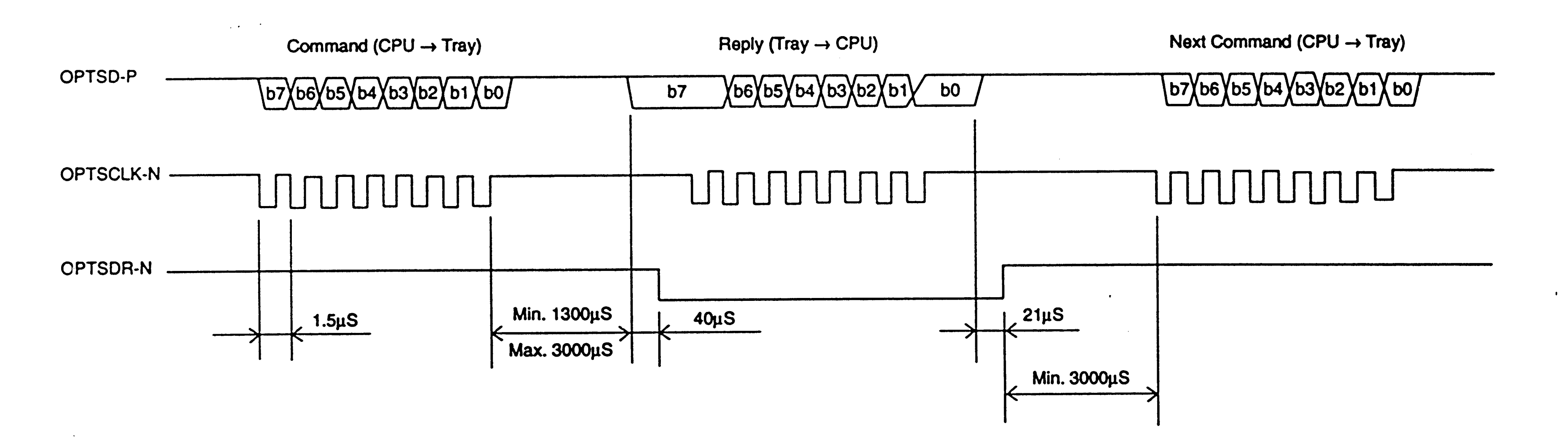


Figure 3-14 Option Tray Serial Interface Time Chart

Motor Control Time Chart

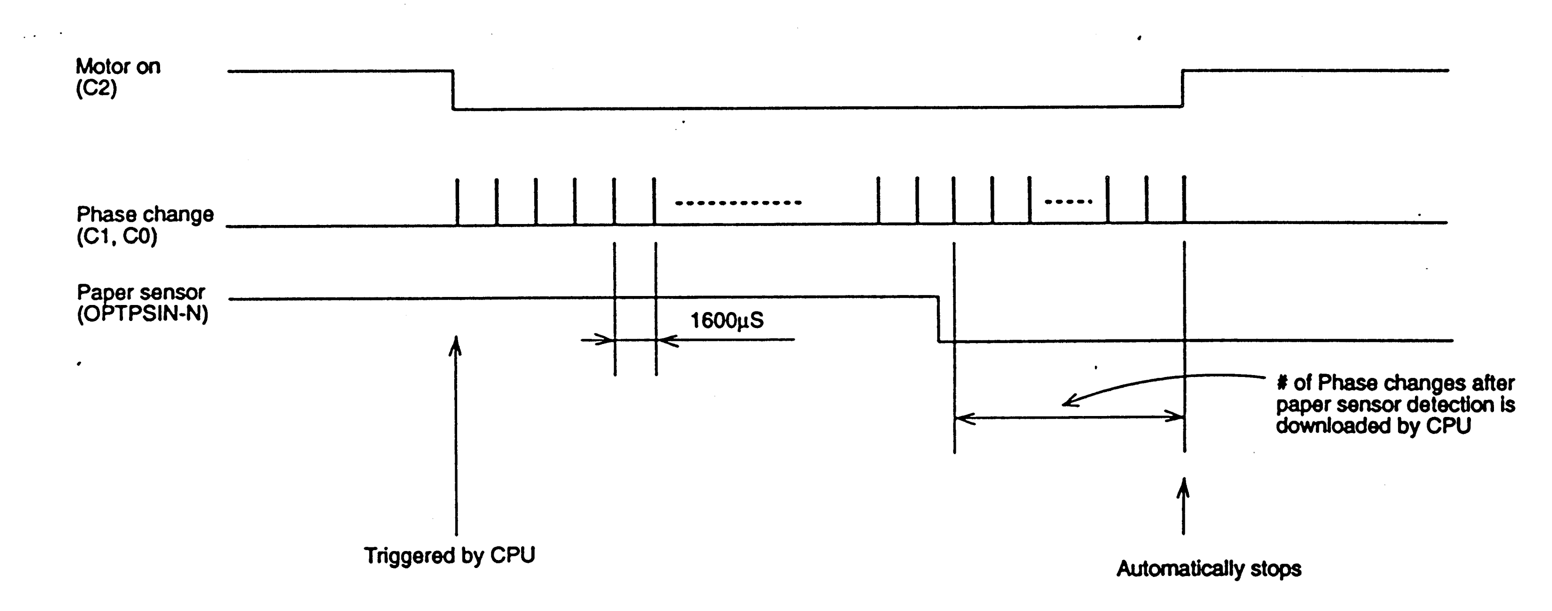


Figure 3-15 Option Tray Motor Control Time Chart

4. TROUBLESHOOTING

4.1 Troubleshooting Table

(A) Power Supply Board (OLER-OLHR-)

Note: (1) A malfunction of the power supply is not repaired by an agency. The abnormality to be treated here is that of sensors only.

(2) LCD Message is for OL610ex (OEL) and OL610e/PS (ODA).

Failure	LCD Message (OL610ex and OL610e/PS)	Flowchart No.
Paper input jams occur frequently.	PAPER INPUTJAM	A-1
Paper feed jams occur frequently.	PAPER FEEDJAMn	A-2
Paper exit jams occur frequently.	PAPER EXITJAMn	A-3
Paper size errors occur frequently.	PAPER SIZEERRn	A-4
The message "TRAY PAPEROUT" remains displayed on the LCD.	TRAY PAPEROUT	A-5
The message "COVER OPEN" remains displayed on the LCD.	COVER OPEN	A-6
The message "TONERLOW" remains displayed on the LCD.	 TONERLOW	A-7
The message "TONERSNS" remains displayed on the LCD.	 TONERSNS	A-8
The printer does not function at all, and the LCD does not display any message.		A-9
Thermistor open error.	ERROR 72	A-10

(B) Main Control Board (LQ5C, LQ6C) (1/2)

Failure	LCD Message	Flowchart No.
Abnormal message display on the LCD (no display, unclear display, display with some dot not lit).	(blank)	B-1
Program ROM error	ERROR 10	B-2
Font ROM error	ERROR 20	B-3
Resident RAM error	ERROR 30	B-4
EEPROM error	ERROR 40	B-5
Option RAM error	ERROR 60	B-6
Cooling fan error	ERROR 70	B-7
SSIO error	ERROR 74	B-8
Operator panel I/F error	ERROR 80	B-9
Option tray I/F timeout error	ERROR 81	B-10
Watchdog timer timeout occurs frequently.	ERROR 90	B-11
Program error	ERROR F*	B-12
Processor error	ERROR 0*	B-13

(B) Main Control Board (LQ5C, LQ6C) (2/2)

Failure	LCD Message	Flowchart No.
Print overrun occurs frequently.	PRINT OVERRUN	B-16
Error receive buffer overflow occurs frequently.	REC BUF OVERRUN	B-18
Paper input jam occurs frequently. #: TRAY1, TRAY2, FEEDER, MANUAL	# INPUTJAM	B-19
Paper input jam occurs frequently. #: TRAY1, TRAY2, FEEDER, MANUAL	# FEED JAM	B-20
The key switch operation on the operator panel is disabled frequently.		B-21
Data sent through the Centronics I/F cannot be received.		B-24
Cover open occurs frequently	COVER OPEN	B-25

(C) Operator Panel Board (OLCC-2-PCB)

Failure	LCD Message	Flowchart No.
Abnormal message display on the LCD (no display, unclear display, display with some dot not lit, etc.)		C-1
The key switch operation on the operator panel is disabled.		C-2
The LCD does not display any message.		C-3
Display on the LCD with some dot not lit.		C-4
Unclear display on the LCD.		C-5

(D) Memory Expansion Board (LQME-)

Failure	LCD Message	Flowchart No.
Option RAM error	ERROR 60	D-1

(E) High capacity Second Paper Feeder Board (TQSB-2)

Failure	LCD Message	Flowchart No.
Paper input jams occur frequently.	TRAY 2 INPUTJAM	E-1
Paper out occurs even if the papers are in cassette or a tray.	TRAY 2 PAPEROUT	E-2
Second tray cover open errors occur even if the cover is closed.	COVER T2 OPEN	E-3
The printer does not recognize an option tray.		E-4

(F) Multi purpose Feeder (OLEV)

Failure	LCD Message	Flowchart No.
Paper input jams occur frequently.	FEEDER INPUTJAM	f-1
Paper out occurs even if the papers are in a cassette or a tray.	FEEDER PAPEROUT	F-2
The printer does not recognize an option tray.		F-3

4.2 Troubleshooting Flowchart

A-1 Paper input jams occur frequently.

- Is PS3 (Inlet Sensor 1) operating normally?
  - No — Replace PS3.
- Yes — Is PS5 (Inlet Sensor 2) operating normally?
  - No — Replace PS5.
- Yes — Replace IC2 (LC9700A).

A-2 Paper feed jams occur frequently.

- Is PS3 (Inlet Sensor 1) operating normally?
  - No — Replace PS3.
- Yes — Is PS5 (Inlet Sensor 2) operating normally?
  - No — Replace PS5.
- Yes — Is PS2 (Paper Sensor) operating normally?
  - No — Replace PS2.
- Yes — Is PS1 (Outlet Sensor) operating normally?
  - No — Replace PS1.
- Yes — Replace IC2 (LC9700A).

A-3 Paper exit jams occur frequently.

- Is PS1 (Outlet Sensor) operating normally?
  - No — Replace PS1.
- Yes — Replace IC2 (LC9700A).

A-4 Paper size errors occur frequently.

- Is PS3 (Inlet Sensor 1) operating normally?
  - No   Replace PS3.
- Yes   Is PS5 (Inlet Sensor 2) operating normally?
  - No   Replace PS5.
- Yes   Replace IC2 (LC9700A).

A-5 The message "TRAY PAPEROUT" remains displayed on the LCD

- Is PS4 (Paper End Sensor) operating normally?
  - No   Replace PS4.
- Yes   Replace IC2 (LC9700A).

A-6 The message "COVER OPEN" remains displayed on the LCD.

- Is SW2 (Cover Open Switch) operating normally?
  - No   Replace SW2.
- Yes   Is the CVOPN-N signal low at SW2?
  - No   Replace SW2.
- Yes   Is CVOPN-N signal low at Pin-2 of R600?
  - No   Replace the power supply board.
- Yes   Replace R564.

A-7 The message "TONERLOW" remains displayed on the LCD.

- Is PS6 (Toner Sensor) operating normally?
  - No   Replace PS6.
- Yes   Replace IC2 (LC9700A).

A-8 The message "TONERSNS" remains displayed on the LCD.

- Is PS6 (Toner Sensor) operating normally?
  - No   Replace PS6.
- Yes   Replace IC2 (LC9700A).

A-9 The printer does not function at all, and the LCD does not display any message.

- Is fuse F1 open?
  - Yes Replace F1.
- No Is the voltage waveform between Pins 1 and 3 of the connector (CN2) same as the waveform shown below?

CH1: DC 2V/div. Normal 5ms/div.

  - No Replace the transformer T1.
  - Has the problem been solved?
    - Yes End.
  - No Is the voltage output between Pins 2 and 3 of the filter L101 100VAC?
    - No Replace the filter L101.
  - Yes Replace the filter L1.
  - Has the problem been solved?
    - Yes End.
  - No Replace the capacitors C1, C2 and C3.
- Yes Is the fuse F3 open?
  - Yes Replace F3.
- No Is the voltage output of Pin 17 of the connector (CN3) about 30 VDC?
  - No Replace the diode bridge DS1.
- Yes Is the voltage output of Pin 11 of the connector (CN3) about 5 VDC?

No Replace the transistor Q1.

Has the problem been solved.

- Yes End.

No Replace the transistor Q2.

Has the problem been solved.

No Replace IC1 (FA7617P-1).

Yes Check the connection between the power supply board and TQCB-PCB.

(A-10) Thermistor open error (ERROR 72).

Is the voltage output between (L) and (N) of the connector ACOUT correct (240V or 120V)?

Yes Replace IC2 (LC9700A).

Has the problem been solved?

- Yes End.

No Thermistor of fuser failure

No Is Pin 2 (HEAT-N signal) of PC1 (S21ME4) low?

- No Check the connection between the power supply board and TWCB-PCB.

Yes Is Pin 1 (HEAT-NO signal) of PC1 (S21ME4) low?

No Replace the photo coupler PC1 (S21ME4).

Has the problem been solved?

- Yes End.

No Replace the thyristor D1 (TM1241/TM1261).

Yes Is Pin 10 of IC4 (324P) low?

- No Replace Q43 (2SC3400).

Yes Replace IC4 (324P).

B-1 Abnormal message display on the LCD.

- Replace Q3C, 05C.
- Has the problem been solved?
  - • Yes End.
- No Is the 12.288-MHz clock signal being sent to Pin 3 of OSC1?
  - • No Replace OSC1 (CST 12.288MTW).
- Yes Is the output at Pin 13 (CLRST-N) of 01B (NJM2901 or µPC339G2) normal (see Section 3.3 Reset Control on page 7)?
  - • No Replace 01B (NJM2901 or µPC339G2).
- Yes Program ROM error (ERROR 10).

B-2 Program ROM error (ERROR 10).

- Replace Q2 (MB838200AP-G-602).

B-3 Font ROM error (ERROR 20).

- Replace 02C and 04C.

B-4 Resident RAM error (ERROR 30).

- Are negative pulses being put out to Pin 8 (DRASO-N) of 06A, 06B, 06C, 06D, (424800-80L)?
  - • No Failure of 03E (MHM2029-002K).
- Yes Are negative pulses being sent to Pin 23 (DCAS0-N, DCAS1-N, DCAS2-N, DCS3-N) of 06A, 06B, 06C, 06D (232800-80L)?
  - • No Failure of 03E (MHM2029-002K).
- Yes Replace 06A, 06B, 06C, 06D (424800-80L).

B-5 EEPROM error (ERROR 40).

- Replace 04G (BR93LC46A).
- Has the problem been solved?
  - • Yes End.
- No Failure of 03E (MNM2029-002K).

B-6 • Option RAM error (ERROR 60)

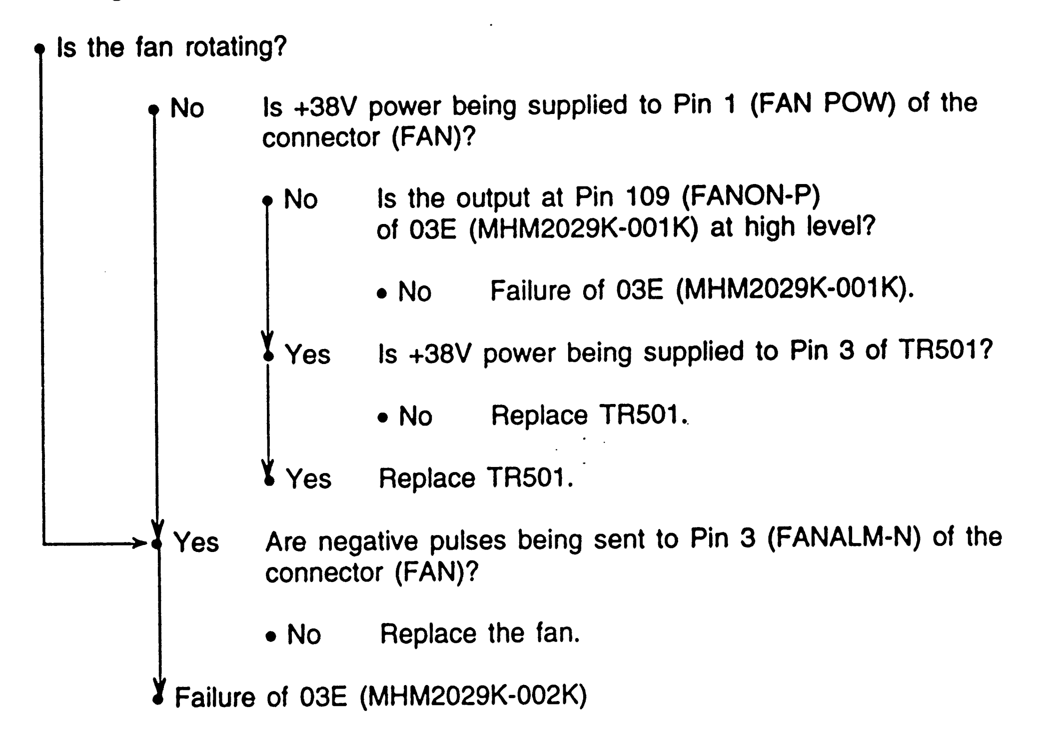
• The MENU PRINT memory capacity does not increase even when an expansion memory board is installed.

• Are negative pulses being put out to Pin 83 (DRAS2-N), Pin 84 (DRAS3-N), Pin 85 (DRAS4-N), Pin 86 (DRAS5-N) of the connector (OPTION)?

  • No Failure of 03E (MHM2029-002K).

• Yes Failure of TQMA-PCB. Go to flowchart (D-1)

B-7 Cooling fan error (ERROR 70)



B-8 • SSIO error (ERROR 74)

• Is the connection at the connector (POWER) properly engaged?

  • No Replace the connector (POWER).

• Yes Failure of 03E (MHM2029-002K).

B-9 Operator panel I/F timeout error (ERROR 80).

• Is the connection at the connector (PANEL) properly engaged?

  • No Replace the connector (PANEL).

• Yes Failure of 03E (MHM2029-002K).

B-10 Option tray I/F timeout error (ERROR 81).

- Is the connection at the connector (2NDTRAY) properly engaged?
  - No — Replace the connector (2NDTRAY).
- Yes — Is the connection at the connector (ENVELOPE) properly engaged?
  - No — Replace the connector (ENVELOPE).

B-11 Watchdog timer timeout error occurs frequently (ERROR 90).

- Failure at 03E (MHM2099-002K).

B-12 Program error (ERROR F*).

- Is the connection between CN10 and the option card correct? Replace 06A, 06B, 06C and 06D.
- Has the problem been solved?
  - Yes — End.
- No — Failure of 03E (MHM2029-002K).

B-13 Processor error (ERROR 0*).

- Replace 06A, 06B, 06C, and 06D.
- Has the problem been solved?
  - Yes — End.
- No — Failure of 03E (MHM2029-002K).

B-16 Print overrun occures frequently.

- Replace Q2 (MB838200AP-G-602).
- Has the problem been solved?
  - Yes — End.
- No — Failure of 03E (MHM2029-002K).

B-18 Error receive buffer overflow occurs frequently.

[Centronics I/F]

- Is the BUSY signal being sent to Pin 11 (BUSY-P) of the connector (CENT)?
  - No — Is the BUSY signal being sent to Pin 3 (BUSY-P) of 02D (7407)?
    - Yes — Replace 02D (7407).
  - No — Failure of 03E (MHM2029-002K).
- Yes — Verify the host settings.

B-19 Paper input jam.

- Is the hopping motor rotating normally?
  - No — Are the waveforms of RM/PMPH1-P and RM/PMPH2-P signals as shown in Section 3.9 (2) being sent to Pins 14 and 15 of 06E respectively?
    - No — Failure of 03E (MHM2029-002K).
  - Yes — When the motor is rotating, does the output to Pin 27 of 06E go high?
    - No — Is the waveform of RMON-N, R-MON2-N as shown in Section 3.9(2) being sent to Pin 3 of TR503 and TR4 (DTA114EK)?
      - No — Failure of 03E (MHM2029-002K).
    - Yes — Replace TR502 (DTA114EK) or TR4 (DTA114EK).
  - Yes — Is the voltage at Pin 3 of 09A +38V?
    - No — Is the voltage at Pin 2 of FU1 +38V.
      - No — Replace FU1 (fuse).
    - Yes — Replace D3 and D2 (EMD1Z).
  - Yes — Replace 06E.
- No — Failure of the power supply board or mechanical parts.

B-20 Paper feed jam occurs frequently.

- Is the (drum) motor rotating normally?

  - No — Are the waveforms of DMPH1-P and DMPH2-P as shown in Section 3.9(1) being sent to Pins 14 and 15 of 05F respectively?
    - No — Failure of 03E (MHM2029-002K).
  - Yes — When the main (drum) motor is rotating, is DMON1-N, DMON2-N at Pin 2 of TR502 and TR3 (DTA114K) low?
  - No — Failure of 03E (MHM2029-002K).
  - Yes — When DMON1-N signal at Pin 3 of TR502 changes, does VREF1 signal at Pins 2 of TR502 change?
  - No — Replace TR502.
  - Yes — When DMON2-N signal at Pin 3 of TR3 changes, does VREF2 signal at Pin 2 of TR3 change?
    - No — Replace TR3
  - Yes — Replace 05F.
  - Has the problem been solved?
    - Yes — End.
  - No — Replace D15 and D16 (IB25-03-479).

B-21 The key switch operation on the operator panel is disabled frequently.

- Is the clock signal (285kHz) being sent to Pin 6 of CN5 during key operations?
  - No — Failure of 03E (MHM2029-002K).
- Yes — Is the data signal being sent to Pin 3 (OPDTOUT-P) of CN5 during key operations??
  - No — Failure of 03E (MHM2029-002K).
- Yes — Verify the connection of CN5.

B-24 Data sent through the centronics I/F cannot be received.

- Is the signal at Pin 11 (BUSY-P) of the connector (CENT) low?
  - No — Is the signal at Pin 1 (PBUSY-P) of 02D (7407) change at data reception as shown below?

	ON-LINE	OFF-LINE
PBUSY-P	Low	High

    - No — Failure of 03E (MHM2029-002K).
  - Yes — Replace 02D (7407)?
- Yes — Is the level of the signal at Pin 1 (STB-N) of the connector (CENT) change at data reception?
  - No — Verify the connection of I/F cable or the operation of the host computer.
- Yes — Are the signals at Pin 5 (PACK-N), Pin 13 (FAULT-N) of 02D (7407) respectively low and high in on-line mode?
  - No — Replace 02D (7407).
  - Has the problem been solved?
    - Yes — End.
  - No (return to main line)
- Yes — Failure of 03E (MHM2029-002K).

B-25 Cover open occurs frequently.

- Are Pins 2 and 3 of the diode D506 open?
  - Yes — Replace D506.
- No — Is the connection of the connector (POWER), correct?
  - No — Replace the connector (POWER).
- Yes — Failure of 03E (MHM2029-002K).

C-1 Abnormal message display on the LCD (no display, unclear display, display with some dot not lit, etc.)

- Is +5V power being supplied to Pin 8 of IC1 (BU6152S)?
  - No Replace CN1.
- Yes Is the CLOCK signal being sent to Pin 26 (OP-CLOCK-N) of IC1 (BU6152S)?
  - No Replace CN1.
- Yes Is the DATA signal put out to Pin 2 (OP-DATA-IN) of IC1 (BU6152S)?
  - No Replace CN1.
- Yes Is the LOAD signal being sent to Pin 11 (OP-LOAD-N) of IC1 (BU6152S)?
  - No Replace CN1.
- Yes Is the DATA signal being sent to Pin 24 (OP-DATA-OUT) of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is +5V power being supplied to Pin 2 of CN1? (OLCC-2 PCB)
  - No Replace CN1. (OLCC-2 PCB)
- Yes Is the DB signal put out to Pins, 19, 20, 29, 30 (DB4 to DB7) of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is the RS signal being sent to Pin 22 of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is the R/W signal being sent to Pin 22 of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is the R/W signal being sent to Pin 22 of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Is the R/W signal being sent to Pin 27 of IC1 (BU6152S)?
  - No Replace IC1 (BU6152S).
- Yes Replace CN2.

C-2 The key switch operation on the operator panel is disabled.

- Do the signals at Pins, 3, 7, 10, 18, 23, 31 of IC1 (BU6152S) change from high to low level by key switch pushing?
  - No   Replace SW1 to SW8.
- Yes   Is the connection of CN1 correct? (OLCC-2 PCB)
  - No   Connect the connector correctly.
- Yes   Replace IC1 (BU6152S).

C-3 The LCD does not display any message.

- Is +5V power being supplied to Pin 33 of IC2 (HD44780)?
  - No   Replace CN1. (OLCC-2 PCB).
- Yes   Are 4.15V, 3.3V, 2.46V, 1.61V, and 0.77V powers being supplied respectively to Pins 26, 27, 28, 29 and 30 of IC2 (HD44780)?
  - No   Are the resistance values of R5 through R10 correct? (OLCC-2 PCB)
    - No   Replace R5 through R10. (OLCC-2 PCB)
  - Yes
- Yes   Replace IC2 (HD44780).
- Has the problem been solved?
  - Yes   End.
- No   Replace CN1. (OLCC-2 PCB)
- Has the problem been solved?
  - Yes   End.
- No   Is the contact surface of the zebra rubber dirty?
  - No   Clean the dirt.
- Yes   Replace the zebra solved?
- Has the problem been solved?
  - Yes   End.
- No   Replace the LCD.

C-4 Display on the LCD with some dot not lit.

Are 4.15V, 3.3V, 2.46V, 1.61V, and 0.77V powers being supplied respectively to Pins 26, 27, 28, 29, and 30 of IC2 (HD44780)?

- No   Replace R5 through R10. (OLCC-2 PCB)

Yes   Is the COM signal being sent to Pins 47 to 62 (COM01 to COM16) of IC2 (HD44780)?

- No   Replace IC2 (HD44780).

Yes   Is the SEG signal being sent to Pins 1 to 22 (SEG 19 to SEG40), Pins, 63 to 80 (SEG01 to SEG18) of IC2 (HD44780)?

- No   Replace IC2 (HD44780).

Yes   Is the contact surface of a zebra rubber dirty?

- No   Clear the dirt.

Yes   Replace the zebra rubber.

Has the problem been solved?

- Yes   End.

No   Replace the LCD.

C-5 Unclear display on the LCD.

Is +5V power being supplied to Pin 33 of IC2 (HD44780)?

- No   Replace CN1. (OLCC-2 PCB)

Yes   Are 4.15V, 3.3V, 2.46V, 1.61V, and 0.77V powers being supplied respectively to Pins 26, 27, 28, 29 and 30 of IC2 (HD44780)?

- No   Replace R5 through R10. (OLCC-2 PCB)

Yes   Is the contact surface of a zebra rubbber dirty?

- No   Clear the dirt.

Yes   Replace the zebra rubber.

Has the problem been solved?

- Yes   End.

No   Replace the LCD.

D-1 Option RAM error (ERROR 60)

- Do the signals at Pins 2, 4, 6 and 8 (RAS2, RAS3, RAS4 and RAS5) of Q7 (74ACT244) vary?

  - No — Replace CN1.

- Yes — Do the signals at Pins 12, 14, 16 and 18 (RAS5, RAS4, RAS3 and RAS2) of Q7 (74ACT244) vary?

  - No — Replace the bus buffer Q7 (74ACT244).

- Yes — Does the signal at Pin 6 of Q8 vary?

  - No — Replace Q8.

- Yes — Replace the option card.

E-1 Paper input jams occur frequently.

- Has the fuse F1 opened?
  - No — Is the high voltage (around 30V being sent to Pin 2 of D1 and Pin 2 of D2?
    - No — Replace D1 or D2.
  - Yes — Is the signal level at Pin 22 of IC2 at low level?
    - No — Replace IC2.
  - Yes — Are the signals at Pins 20 and 21 of IC2 being altered?
    - No — Replace IC2.
  - Yes — Is the signal level at Pin 2 of TR2 around 5V?
    - No — Replace TR2.
  - Yes — Are the signal levels at Pin 20 and 27 of IC3 around 3.4V?
    - No — Replace R6 and R17.
  - Yes — Are the signals at Pins 1 to 4 of connector (MOTOR) being altered?
    - No — Replace IC3.
  - Yes — Replace motor.
- Yes — Replace the Fuse F1.

E-2 Paper out occurs even if the papers are in a cassette.

- Is paper sensor (SEN1) operating normally?
  - No — Replace the paper sensor.
- Yes — Replace IC2.

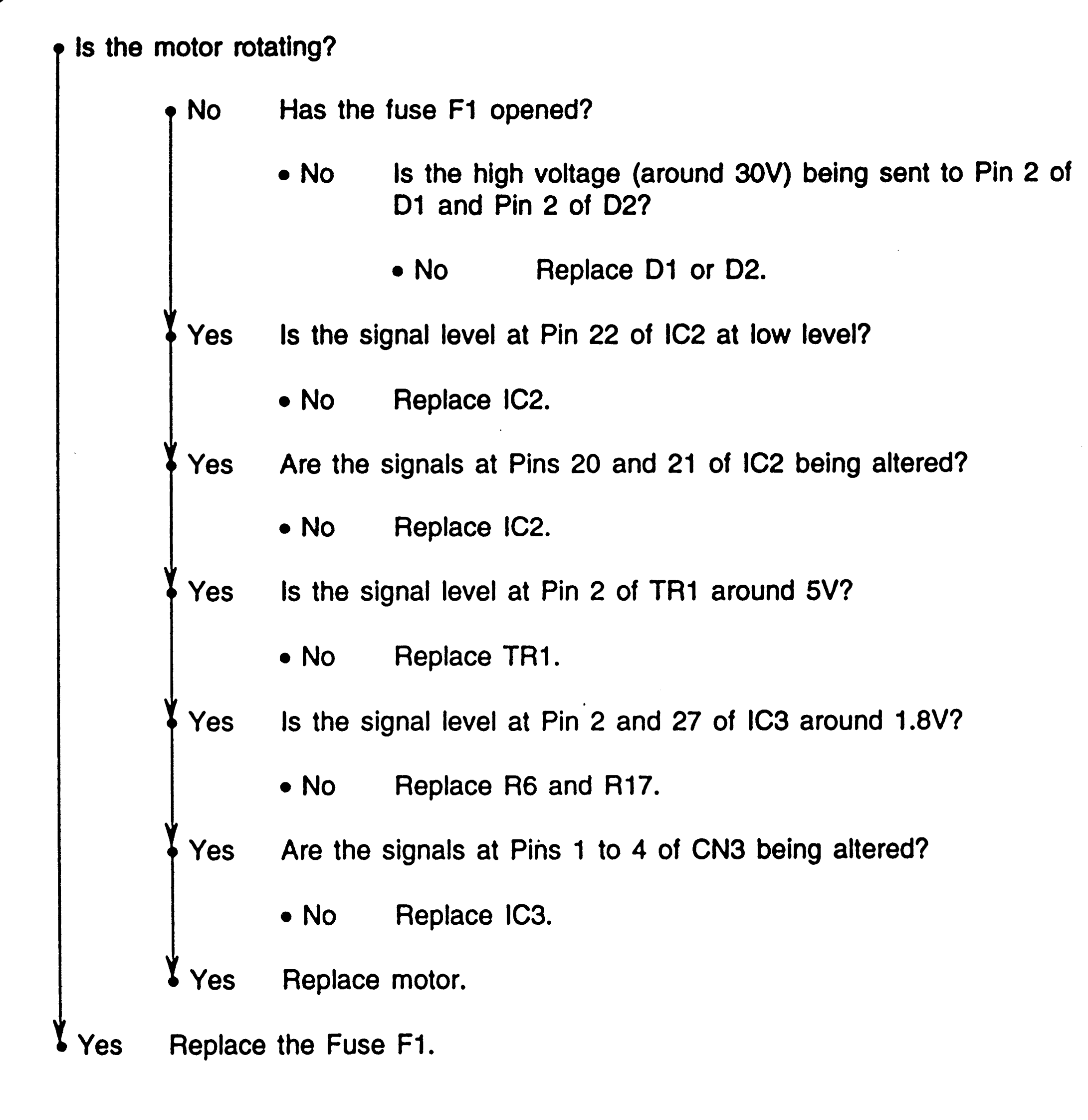
E-3 High capacity Second Paper Feeder cover open errors occur even if the cover is closed.

- Is cover open sensor (SEN2) operating normally?
  - No — Replace SEN2.
- Yes — Replace IC2.

E-4 The printer does not recognize High capacity Second Paper Feeder.

- Do signal levels at Pin 2 (OPTSCLK-N) and 3 (OPTSD-P) PU alter at power-up time?
    - No — Replace Cable.
        - No — Replace D1 or D2.
- Yes — Do signal levels at Pin 4, 7, and 9 of IC2 alter at power-up time?
    - No — Is signal level at Pin 2 of D5 at 3.9V?
        - No — Replace D5.
    - Yes — Is the signal level at Pin 2 of TR1 around 5V?
        - No — Replace TR1.
    - Yes — Is signal level at Pin 2 of C3 high?
        - No — Replace C3.
    - OK?
    - No — Is OSC1 being oscillated at 4MHz?
        - No — Replace OSC1.
    - Yes — Replace IC2.
- Yes — Do signal levels at Pin 3 and 8 of IC1 alter at power-up time?
    - No — Replace IC1.
- Yes — Does signal level at Pin 6 of IC1 alter at power-up time when Pin 8 of IC1 is at low level?
    - No — Replace IC1.

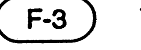
F-1 Paper input jams occur frequently.



- Is the motor rotating?
  - No — Has the fuse F1 opened?
    - No — Is the high voltage (around 30V) being sent to Pin 2 of D1 and Pin 2 of D2?
      - No — Replace D1 or D2.
  - Yes — Is the signal level at Pin 22 of IC2 at low level?
    - No — Replace IC2.
  - Yes — Are the signals at Pins 20 and 21 of IC2 being altered?
    - No — Replace IC2.
  - Yes — Is the signal level at Pin 2 of TR1 around 5V?
    - No — Replace TR1.
  - Yes — Is the signal level at Pin 2 and 27 of IC3 around 1.8V?
    - No — Replace R6 and R17.
  - Yes — Are the signals at Pins 1 to 4 of CN3 being altered?
    - No — Replace IC3.
  - Yes — Replace motor.
- Yes — Replace the Fuse F1.

F-2 Paper out occurs even if the papers are in a cassette or tray.

- Is paper sensor (SEN1 in Second Tray and SEN2 in Multi-purpose Feeder) operating normally?
  - No — Replace the paper sensor.
- Yes — Replace IC2.



F-3 The printer does not recognize Multi Purpose Feeder.

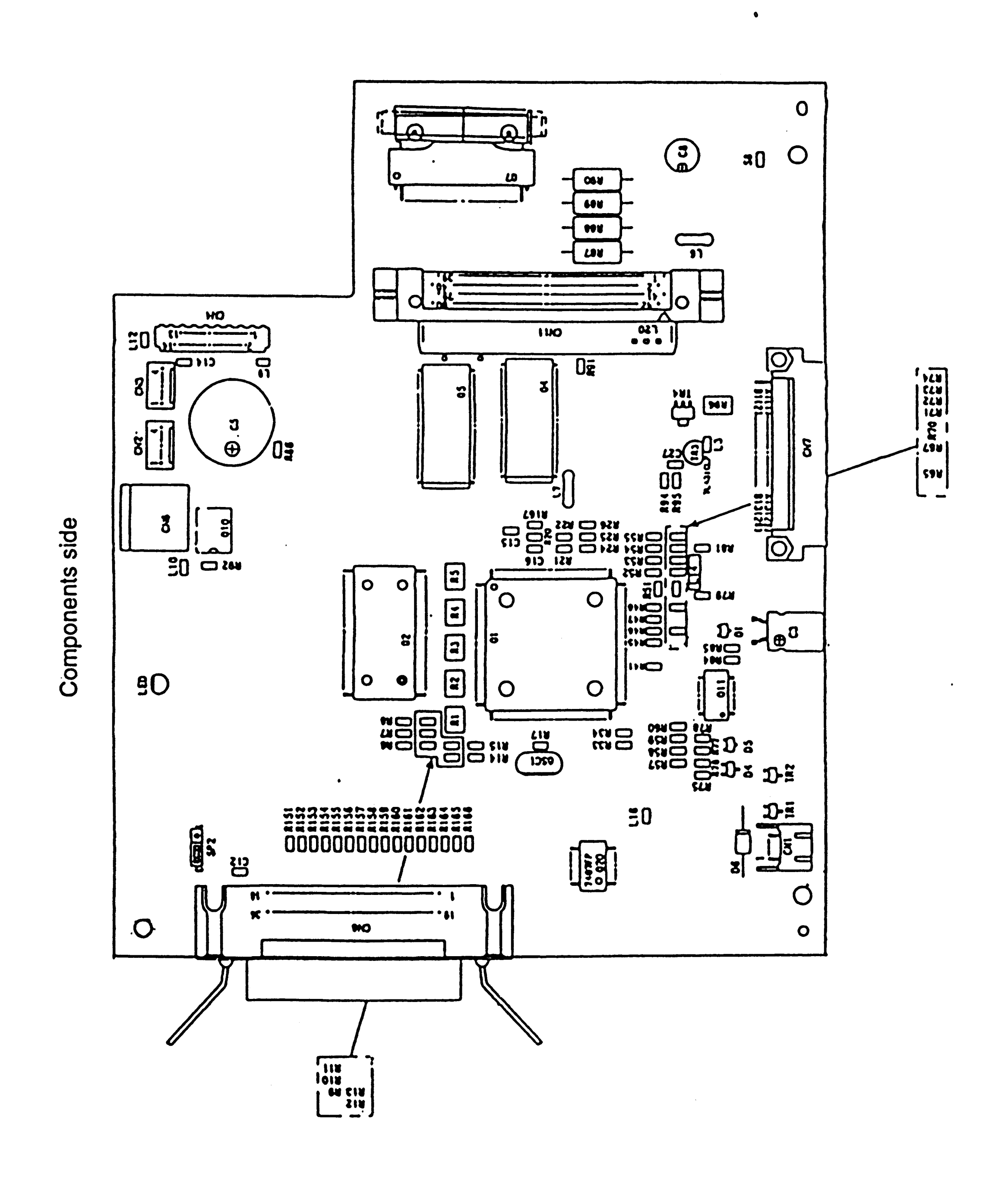
- Do signal levels at Pin 2 (OPTSCLK-N) and 3 (OPTSD-P) CN1 alter at power-up time?
  - No — Replace Option Tray Cable.
- Yes — Do signal levels at Pin 4, 7, and 9 of IC2 alter at power-up time?
  - No — Is signal level at Pin 2 of D4 at 3.9V?
    - No — Replace D5.
  - Yes — Is the signal level at Pin 2 of TR4 around 5V?
    - No — Replace TR4.
  - Yes — Is signal level at Pin 2 of C2 high?
    - No — Replace C2.
  - OK?
  - No — Is OSC1 being oscillated at 4MHz?
    - No — Replace OSC1.
  - Yes — Replace IC2.
- Yes — Do signal levels at Pin 3 and 11 of IC1 alter at power-up time?
  - No — Replace IC1.
- Yes — Does signal level at Pin 8 of IC1 alter at power-up time when Pin 3 of IC1 is at low level?
  - No — Replace IC1.

5. COMPONENT PARTS LIST

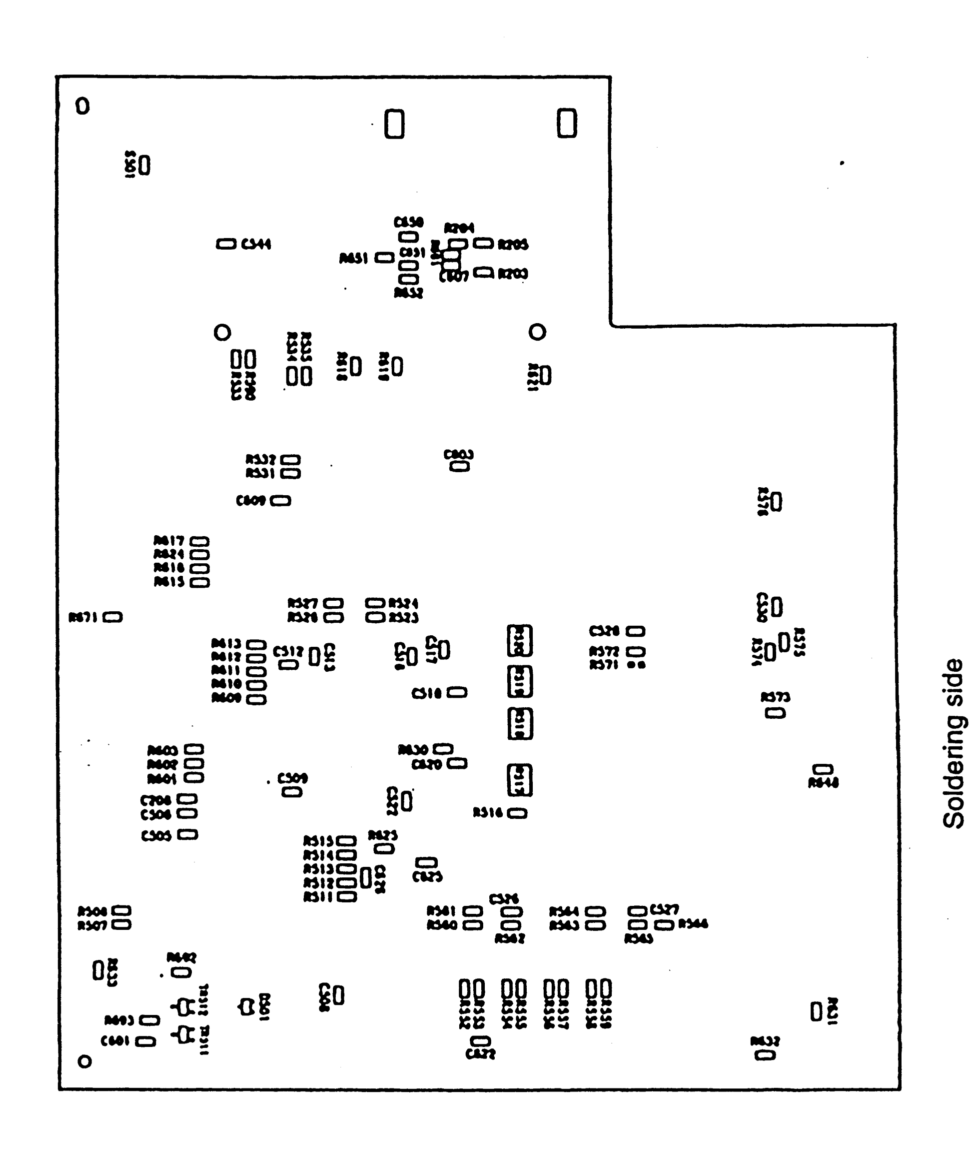
LQ5C PCB Rev. 2 or Rev. 3	4YA4046-1670G1	* Note 1
LQ5C PCB Rev. 4 (F/W Ver. 02.01)	4YA4046-1670G11	
LQ5C PCB Rev. 4 (F/W Ver. 02.15)	4YA4046-1670G8	
LQ6C PCB Rev. 3	4YA4046-1671G1	* Note 2
LQ6C PCB Rev. 4	4YA4046-1671G11	
LQME-PCB Rev. 2	4YA4121-1058G11	
OLER-Printed Circuit Board	4YB4049-7101G1	
OLHR-Printed Circuit Board	4YB4049-7101G2	
LQ8A-PCB Rev. 2	4YB4046-1672G11	

Note 1: LQ5C PCB Rev. 2 or Rev. 3 is not spare part.

Note 2: LQ6C PCB Rev. 3 is not spare part.



LQ5C PCB Rev. 2 or Rev. 3 4YA4046-1670G1 1/2



LQ5C PCB Rev. 2 or Rev. 3 4YA4046-1670G1 2/2

LQ5C PCB Rev. 2 or Rev. 3 4YA4046-1670G1 (1/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1					
2					
3	D1, D5, D501	611A0000N0001	SS100MA80VACP Signal DI (CP)	3	
4	D6	613A2232L0182	RD10F-B ZENOR DI	1	
5	D4	613A0233M0222B	RD15M-B2 Zenor DI (CP)	1	
6	LED	650A0229M0018	SEL3910D-YZ LED	1	
7				1	
8	R625	323A5003F0105	RM73B2A105F RN resistor (CP)	1	
9	R691	323A5003F0112	RM73B2A112F RN resistor (CP)	1	
10	R204, R205	323A5003F0152	RM73B2A152F RN resistor (CP)	2	
11	R94	323A5003F0201	RM73B2A201F RN resistor (CP)	1	
12	R60, R84, R617	323A5003F0242	RM73B2A242F RN resistor (CP)	3	
13	R75	323A5003F0392	RM73B2A392F RN resistor (CP)	1	
14	R85	323A5003F0393	RM73B2A393F RN resistor (CP)	1	
15	R95	323A5003F0621	RM73B2A621F RN resistor (CP)	1	
16	R203, R651, R652	323A5003F0821	RM73B2A821F RN resistor (CP)	3	
17	R51, R52, R71, R561, R613	323A5003J0101	RM73B2A101J RN resistor (CP)	5	

LQ5C PCB Rev. 2 or Rev. 3 4YA4046-1670G1 (2/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
18	R46-R48, R67, R79, R560, R562-R564, R5 73, R576	323A5003J0102	RM73B2A102J RN resistor (CP)	11	
19	R507, R565, R566, R671	323A5003J0103	RM73B2A103J RN resistor (CP)	4	
20	R86, R575	323A5003J0112	RM73B2A112J RN resistor (CP)	2	
21	R26, R55, R74	323A5003J0122	RM73B2A122J RN resistor (CP)	3	
22	R76	323A5003J0125	RM73B2A125J RN resistor (CP)	1	
23	R22, R33, R34, R57, R73, R590, R648	323A5003J0151	RM73B2A151J RN resistor (CP)	7	
24	R533	323A5003J0153	RM73B2A153J RN resistor (CP)	1	
25	R693	323A5003J0183	RM73B2A183J RN resistor (CP)	1	
26	R59, R65, R531, R532	323A5003J0202	RM73B2A202J RN resistor (CP)	4	
27	R508	323A5003J0203	RM73B2A203J RN resistor (CP)	1	
28	R552-R559	323A5003J0220	RM73B2A220J RN resistor (CP)	8	
29	R6, R7, R9, R10, R12, R13, R20, R91, R92, R167, R523, R524, R534, R535	323A5003J0241	RM73B2A241J RN resistor (CP)	14	
30	R25, R54, R81	323A5003J00272	RM73B2A272J RN resistor (CP)	3	
31	R511-R515	323A5003J0331	RM73B2A331J RN resistor (CP)	5	
32	R77, R151-R166	323A5003J0332	RM73BA332J RN resistor (CP)	17	
33	R630	323A5003J0470	RM73B2A470J RN resistor (CP)	1	

LQ5C PCB Rev. 2 or Rev. 3 4YA4046-1670G1 (3/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
34	R17, R574	323A5003J0471	RM73B2A471J RN resistor (CP)	2	
35	R526, R527, R572, R601-R603	323A5003J0472	RM73B2A472J RN resistor (CP)	6	
36					
37	R70, R72	323A5003J0560	RM73B2A560J RN resistor (CP)	2	
38	R609-R612	323A5003J0561	RM73B2A561J RN resistor (CP)	4	
39	R615, R616, R624, R692	323A5003J0562	RM73B2A562J RN resistor (CP)	4	
40	R78	323A5003J0564	RM73B2A564J RN resistor (CP)	1	
41	R8, R11. R14, R15, R21, R516	323A5003J0680	RM73B2A680J RN resistor (CP)	6	
42	R23, R53	323A5003J0681	RM73B2A681J RN resistor (CP)	2	
43	L3, L9, L10, L12, L16, R41, R45, R58, R618, R619, R621, R631-R633, S8, S501, C12, C601, C622	323A5003P0001	2125JPW Chip jumper (CP)	19	
44	R96	323A5019J0750	ERJ-12YJ750 RN resistor (CP)	1	
45	R87-R90	324A1001J0339	MSF1/2B3.3ΩJ RS resistor (CP)	4	
46	R1-R5, R517-R520	334A5003J0680	MNR34J680 Block resistor (CP)	9	
47	C625, C626	303A3007C0680	CC2012CH1H680J 50V CC capacitor (CP)	2	
48	C526	303A3007K0561	CC2012SL1H561J 50V CC capacitor (CP)	1	
49	C15, C16, C509, C512, C517, C522, C527	303A6008K3102	CK2012B1H102K 50V CK capacitor (CP)	7	

LQ5C PCB Rev. 2 or Rev. 3 4YA4046-1670G1 (4/6)

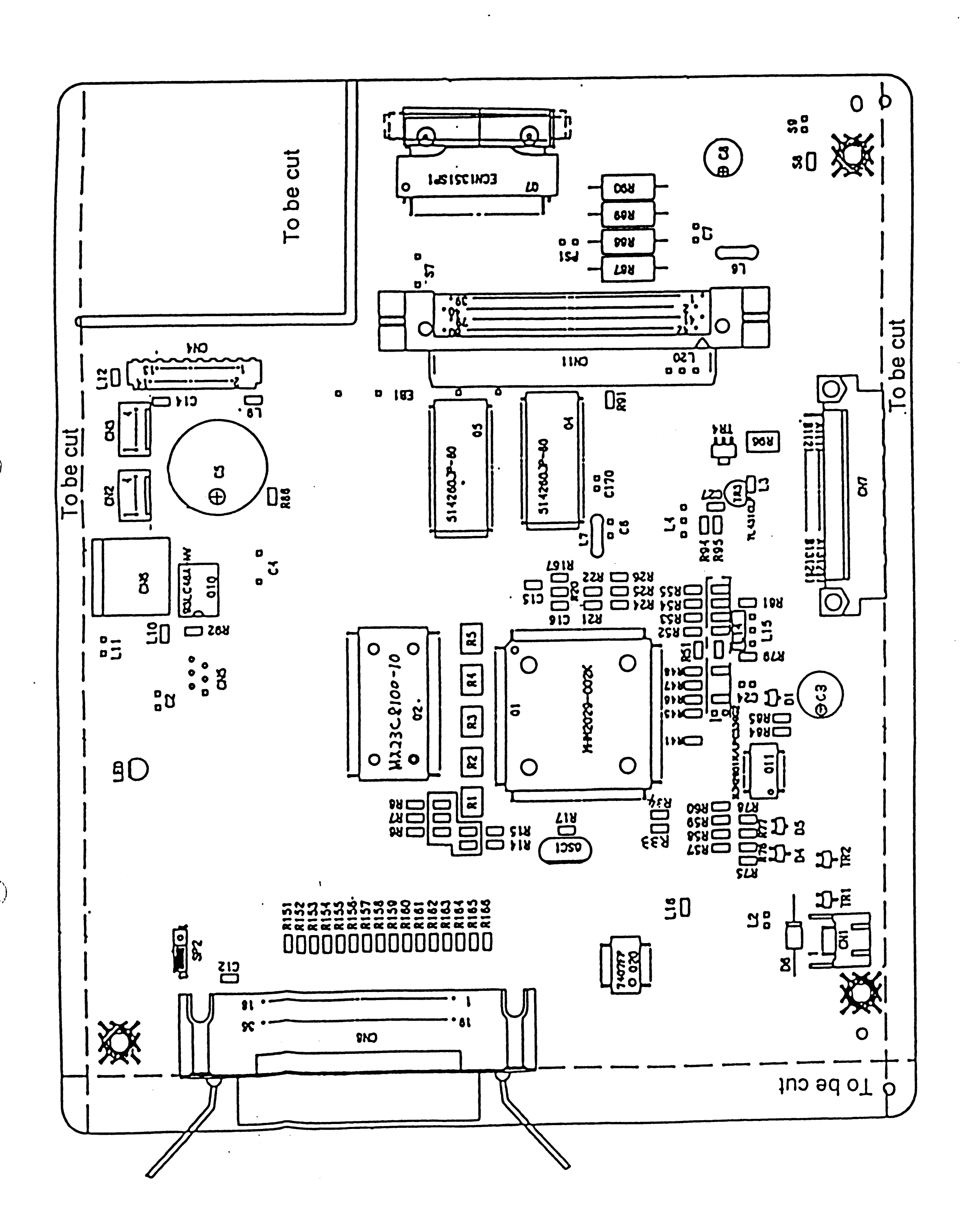
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
50	C505, C506, C513, C528, C603, C609, C620	303A6008Z1105	CK2012F1C105Z 16V CK capacitor(CP) 1UF	7	
51	C208, C508, C516, C518, C530, C544, C607, C650, C651	303A6008Z2104	CK2012F1E104Z 25V CK capacitor (CP)	9	
52	C14, C27	303A6008Z3103	CK2012F1H103Z 50V CK capacitor (CP)	2	
53	C3	304A1034C1221	SXE16VB-220 16V CE capacitor 220UF	1	
54	C8	304A1115H1470	KME50VB-47 50V CE capacitor 47UF	1	
55	C5	304A1137A1332	UVS1A332MHA 10V CE capacitor 3300UF	1	
56					
57	Q20	700A0003N0007	7407FP BIP Digital IC (SO)	1	
58	Q11	720A0503N0007	NJM2901/UPC339G2 BIP linear IC (SO)	1	
59	TR3	720A1050M9007	TL431CLP BIP linear IC	1	
60	Q4, Q5	802A0003N2602	514260JP-80 MOS-D-RAM (SO)	2	
61	Q2	817A3632N0015	MX23C8100MC-10-015 MOS-MROM (SO)	1	
		or 817A3632N0003	OR MX23C8100MC-10-003 MOS-MROM		
		or 817A3632N0006	OR MX23C8100MC-10-006 MOS-MROM		
62	Q10	816A0303M0000	93LC46A-NW MOS-EEPROM	1	
63	Q7	720A1821M0004	ECN1351SP1 BIP linear IC	1	
64					

LQ5C PCB Rev. 2 or Rev. 3 4YA4046-1670G1 (5/6)

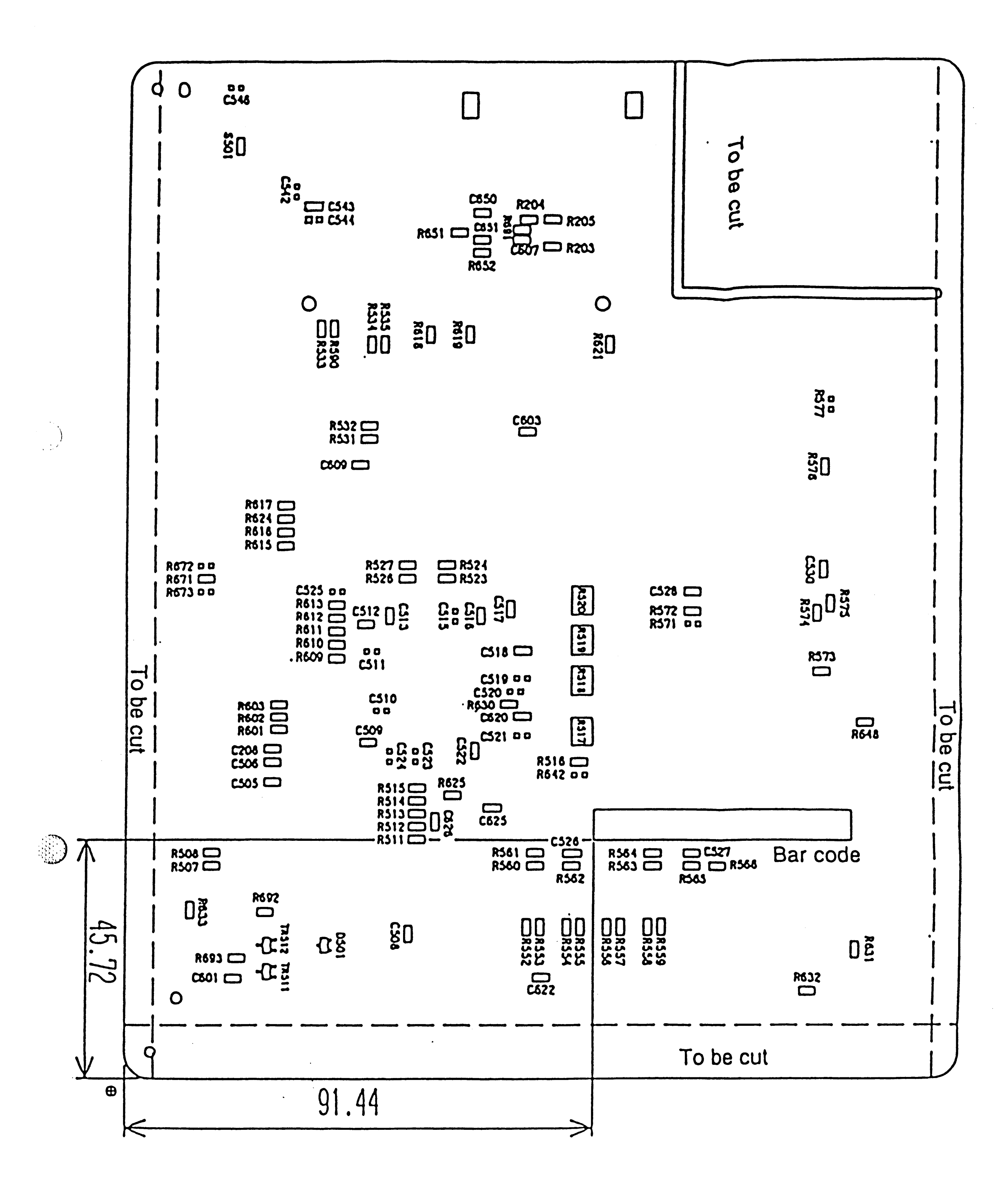
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
65	L6, L7	342A1009P2222	DSS306-0AE222Z EMI filter	2	
66	L14	342A1012P2101	ZJSC-2R2-101 EMI filter	1	
67					
68	Q1	851A0940N0041	MHM2029-002K MOS-CPU (FP)	1	
69					
70	CN7	224A3222P0261	128A-026P2B-L14N PC connector	1	
71	CN4	224A3590P0140	ZC-014 PC connector	1	
72	CN8	220A1783P0362	57RE-40360-730B-D29 square-shaped connector	1	
73	CN1	224A3528P0030	S3B-XH-A PC connector	1	
74	CN2, CN3	224A3357P0040	00-8263-0412-00-000 PC connector	2	
75	CN11	224A35516P0800	PQ80A2FA PC connector	1	
76	CN6	221A1630P0081	TCS7597-01-401 round type connector	1	
77					
78	TR4	603A1132N0001S	2SD1623S NPN-LF-TR (CP)	1	
79	TR2, TR511	602A1035N0019	DTC123YK NPN-HF-TR (CP)	2	
80	TR1, TR512	600A1032N0010	2SA1338 PNP-HF-TR (CP)	2	
81					

LQ5C PCB Rev. 2 or Rev. 3 4YA4046-1670G1 (6/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
82	SP2	224A4082P0030	IMSA9202B-1-03Z013GF PC connector	1	
84	2	224A4080P0020	IMSA-9206H-GF PC connector	1	
85					
86	OSC1	381A1045B0017	CST12.288MTW ceramic oscillator	1	
87					
88	3	4PP4083-6254P001	Push spring	1	



LQ5C PCB Rev. 4 4YA4046-1670G11 1/2



LQ5C PCB Rev. 4 4YA4046-1670G11 2/2

LQ5C PCB Rev. 4 4YA4046-1670G11 (1/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1					
2					
3	D1, D5, D501	611A0000N0001	SS100MA80VACP Signal DI (CP)	3	
4	D6	613A2232L0182	RD10F-B ZENOR DI	1	
5	D4	613A0233M0222B	RD15M-B2 Zenor DI (CP)	1	
6	LED	650A0229M0018	SEL3910D-YZ LED	1	
7				1	
8	R625	323A5003F0105	RM73B2A105F RN resistor (CP)	1	
9	R691	323A5003F0112	RM73B2A112F RN resistor (CP)	1	
10	R204, R205	323A5003F0152	RM73B2A152F RN resistor (CP)	2	
11	R94	323A5003F0201	RM73B2A201F RN resistor (CP)	1	
12	R60, R84, R617	323A5003F0242	RM73B2A242F RN resistor (CP)	3	
13	R75	323A5003F0392	RM73B2A392F RN resistor (CP)	1	
14	R85	323A5003F0393	RM73B2A393F RN resistor (CP)	1	
15	R95	323A5003F0621	RM73B2A621F RN resistor (CP)	1	
16	R203, R651, R652	323A5003F0821	RM73B2A821F RN resistor (CP)	3	
17	R51, R52, R71, R561, R613	323A5003J0101	RM73B2A101J RN resistor (CP)	5	

LQ5C PCB Rev. 4 4YA4046-1670G11 (2/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
18	R46-R48, R67, R79, R560, R562-R564, R573, R576	323A5003J0102	RM73B2A102J RN resistor (CP)	11	
19	R507, R565, R566, R671	323A5003J0103	RM73B2A103J RN resistor (CP)	4	
20	R86, R575	323A5003J0112	RM73B2A112J RN resistor (CP)	2	
21	R26, R55, R74	323A5003J0122	RM73B2A122J RN resistor (CP)	3	
22	R76	323A5003J0125	RM73B2A125J RN resistor (CP)	1	
23	R22, R33, R34, R57, R73, R590, R648	323A5003J0151	RM73B2A151J RN resistor (CP)	7	
24	R533	323A5003J0153	RM73B2A153J RN resistor (CP)	1	
25	R693	323A5003J0183	RM73B2A183J RN resistor (CP)	1	
26	R59, R65, R531, R532	323A5003J0202	RM73B2A202J RN resistor (CP)	4	
27	R508	323A5003J0203	RM73B2A203J RN resistor (CP)	1	
28	R552-R559	323A5003J0220	RM73B2A220J RN resistor (CP)	8	
29	R6, R7, R9, R10, R12, R13, R20, R91, R92, R167, R523, R524, R534, R535	323A5003J0241	RM73B2A241J RN resistor (CP)	14	
30	R25, R54, R81	323A5003J00272	RM73B2A272J RN resistor (CP)	3	
31	R511-R515	323A5003J0331	RM73B2A331J RN resistor (CP)	5	
32	R77, R151-R166	323A5003J0332	RM73B2A332J RN resistor (CP)	17	
33	R630	323A5003J0470	RM73B2A470J RN resistor (CP)	1	

LQ5C PCB Rev. 4 4YA4046-1670G11 (3/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
34	R17, R574	323A5003J0471	RM73B2A471J RN resistor (CP)	2	
35	R526, R527, R572	323A5003J0472	RM73B2A472J RN resistor (CP)	6	
36	R601-R603				
37	R70, R72	323A5003J0560	RM73B2A560J RN resistor (CP)	2	
38	R609-R612	323A5003J0561	RM73B2A561J RN resistor (CP)	4	
39	R615, R616, R624, R692	323A5003J0562	RM73B2A562J RN resistor (CP)	4	
40	R78	323A5003J0564	RM73B2A564J RN resistor (CP)	1	
41	R8, R11. R14, R15, R21, R516	323A5003J0680	RM73B2A680J RN resistor (CP)	6	
42	R24, R53	323A5003J0681	RM73B2A681J RN resistor (CP)	2	
43	L3, L9, L10, L12, L16, R41, R45, R58, R618, R619, R621, R631-R633, S8, S501, C12, C601, C622	323A5003P0001	2125JPW Chip jumper (CP)	19	
44	R96	323A5019J0750	ERJ-12YJ750 RN resistor (CP)	1	
45	R87-R90	324A1001J0339	MSF1/2B3.3ΩJ RS resistor (CP)	4	
46	R1-R5, R517-R520	334A5003J0680	MNR34J680 Block resistor (CP)	9	
47	C625, C626	303A3007C0680	CC2012CH1H680J 50V CC capacitor (CP)	2	
48	C526	303A3007K0561	CC2012SL1H561J 50V CC capacitor (CP)	1	
49	C15, C16, C509, C512, C517, C522, C527	303A6008K3102	CK2012B1H102K 50V CK capacitor (CP)	7	

LQ5C PCB Rev. 4 4YA4046-1670G11 (4/6)

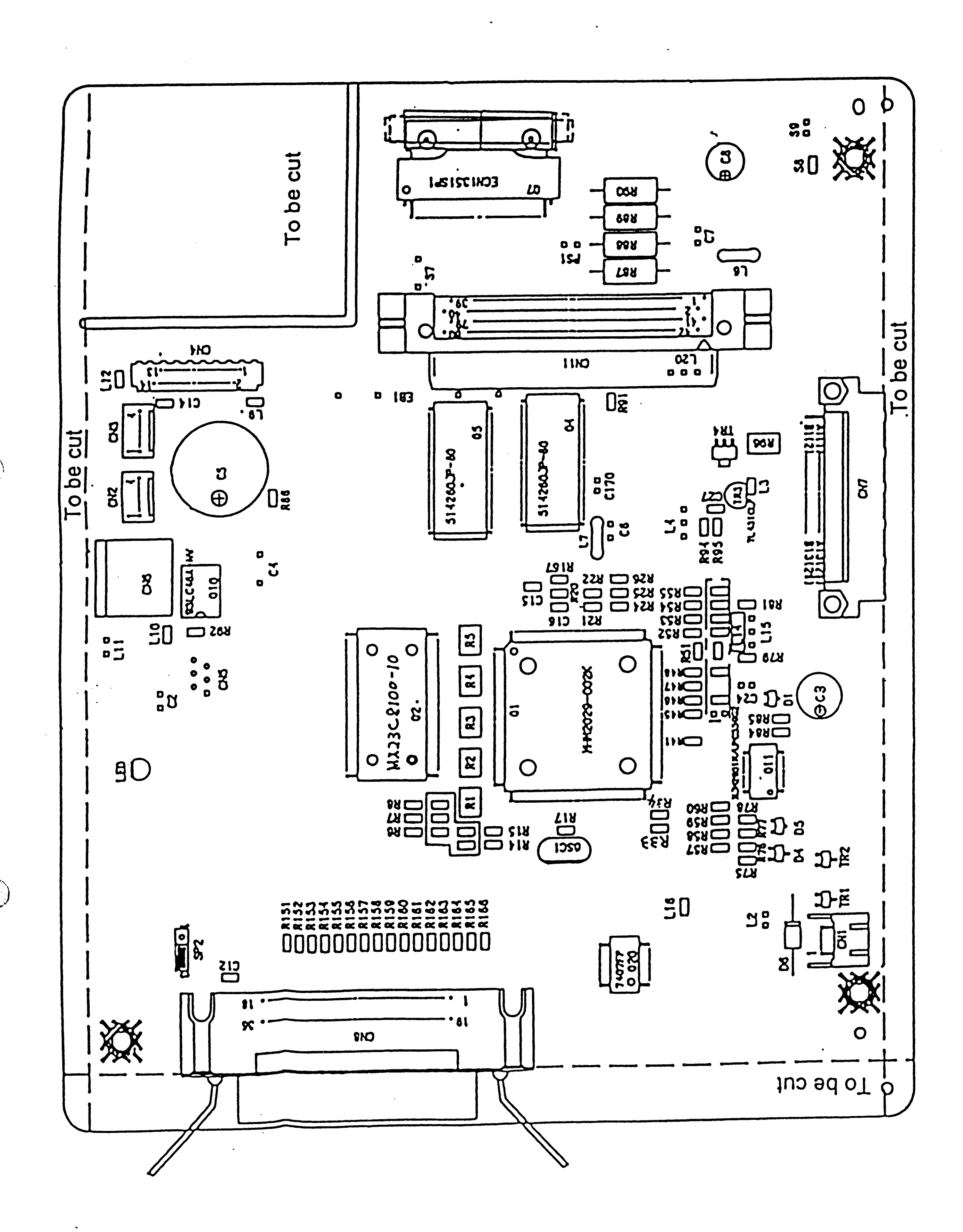
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
50	C505, C506, C513, C528, C603, C609, C620	303A6008Z1105	CK2012F1C105Z 16V CK capacitor(CP) 1UF	7	
51	C208, C508, C516, C518, C530, C543, C607, C650, C651, C14	303A6008Z2104	CK2012F1E104Z 25V CK capacitor (CP)	10	
52	C27	303A6008Z3103	CK2012F1H103Z 50V CK capacitor (CP)	1	
53	C3	304A1007C1221	SXE16VB-220 16V CE capacitor 220UF	1	
54	C8	304A1115H1470	KME50VB-47 50V CE capacitor 47UF	1	
55	C5	304A1137A1332	UVS1A332MHA 10V CE capacitor 3300UF	1	
56					
57	Q20	700A0003N0007	7407FP BIP Digital IC (SO)	1	
58	Q11	720A0503N0007	NJM2901/UPC339G2 BIP linear IC (SO)	1	
59	TR3	720A1050M9007	TL431CLP BIP linear IC	1	
60	Q4, Q5	802A0003N2602	514260JP-80 MOS-D-RAM (SO)	2	
61	Q2	817A3632N0015	MX23C8100MC-10-015 MOS-MROM (SO)	1	
62	Q10	816A0303M0000	93LC46A-NW MOS-EEPROM	1	
63	Q7	720A1821M0004	ECN1351SP1 BIP linear IC	1	
64					
65	L6, L7	342A1009P2222	DSS306-0AE222Z EMI filter	2	

LQ5C PCB Rev. 4 4YA4046-1670G11 (5/6)

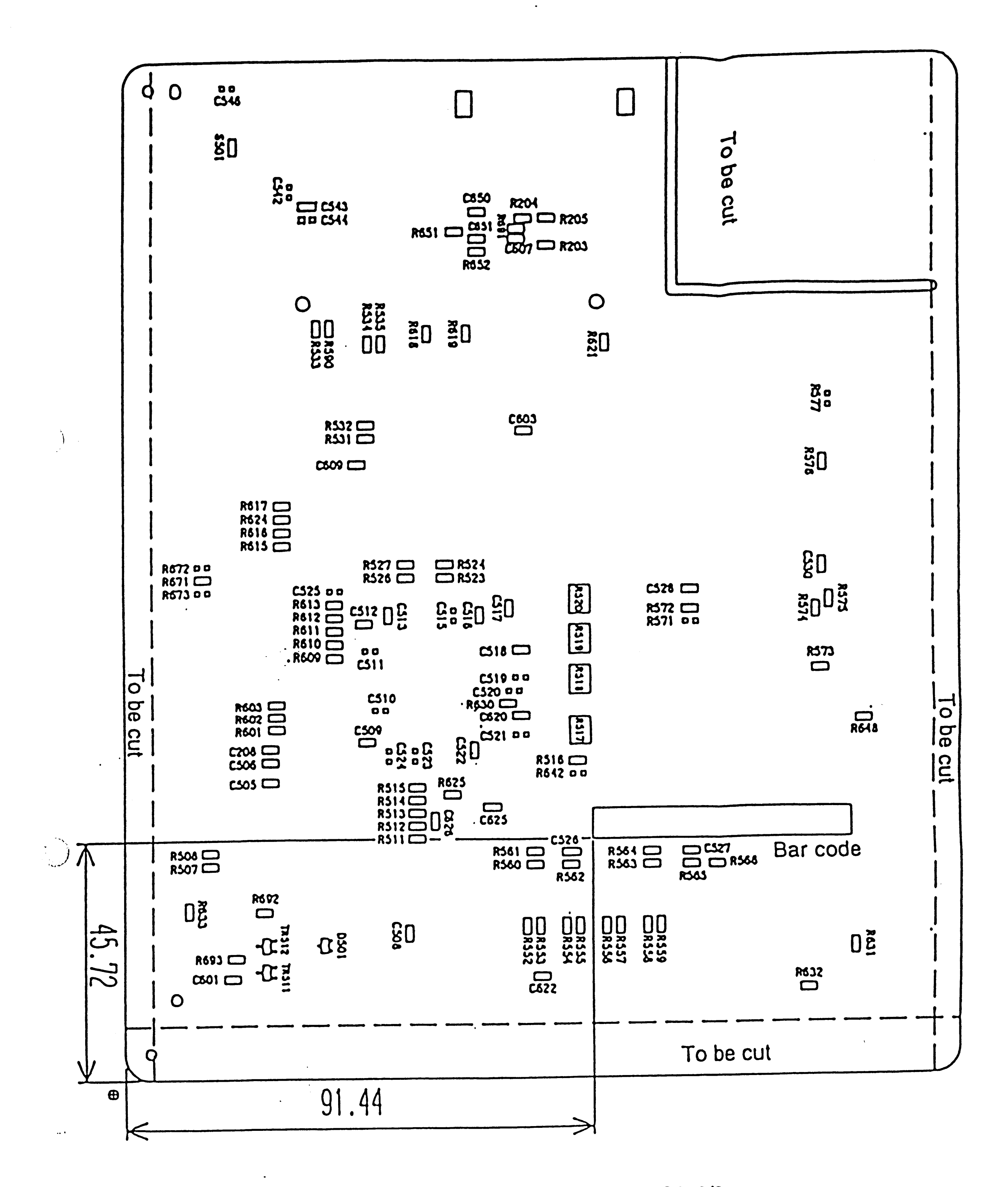
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
66	L14	342A1012P2101	ZJSC-2R2-101 EMI filter	1	
67					
68	Q1	851A0940N0041	MHM2029-002K MOS-CPU (FP)	1	
69					
70	CN7	224A3222P0261	128A-026P2B-L14N PC connector	1	
71	CN4	224A3590P0140	ZC-014 PC connector	1	
72	CN8	220A1783P0362	57RE-40360-730B-D29 square-shaped connector	1	
73	CN1	224A3528P0030	S3B-XH-A PC connector	1	
74	CN2, CN3	224A3357P0040	00-8263-0412-00-000 PC connector	2	
75	CN11	224A35516P0800	PQ80A2FA PC connector	1	
76	CN6	221A1630P0081	TCS7597-01-401 round type connector	1	
77					
78	TR4	603A1132N0001S	2SD1623S NPN-LF-TR (CP)	1	
79	TR2, TR511	602A1035N0019	DTC123YK NPN-HF-TR (CP)	2	
80	TR1, TR512	600A1032N0010	2SA1338 PNP-HF-TR (CP)	2	
81					
82	SP2	224A4082P0030	IMSA9202B-1-03Z013GF PC connector	1	

LQ5C PCB Rev. 4 4YA4046-1670G11 (6/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
84	2	224A4080P0020	IMSA-9206H-GF PC connector	1	
85					
86	OSC1	381A1045B0017	CST12.288MTW ceramic oscillator	1	
87					
88	3	4PP4083-6254P001	Push spring	1	



LQ5C PCB Rev. 4 4YA4046-1670G8 1/2



LQ5C PCB Rev. 4 4YA4046-1670G8 2/2

LQ5C PCB Rev. 4 4YA4046-1670G8 (1/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1					
2					
3	D1, D5, D501	611A0000N0001	SS100MA80VACP Signal DI (CP)	3	
4	D6	613A2232L0182	RD10F-B ZENOR DI	1	
5	D4	613A0233M0222B	RD15M-B2 Zenor DI (CP)	1	
6	LED	650A0229M0018	SEL3910D-YZ LED	1	
7				1	
8	R625	323A5003F0105	RM73B2A105F RN resistor (CP)	1	
9	R691	323A5003F0112	RM73B2A112F RN resistor (CP)	1	
10	R204, R205	323A5003F0152	RM73B2A152F RN resistor (CP)	2	
11	R94	323A5003F0201	RM73B2A201F RN resistor (CP)	1	
12	R60, R84, R617	323A5003F0242	RM73B2A242F RN resistor (CP)	3	
13	R75	323A5003F0392	RM73B2A392F RN resistor (CP)	1	
14	R85	323A5003F0393	RM73B2A393F RN resistor (CP)	1	
15	R95	323A5003F0621	RM73B2A621F RN resistor (CP)	1	
16	R203, R651, R652	323A5003F0821	RM73B2A821F RN resistor (CP)	3	
17	R51, R52, R71, R561, R613	323A5003J0101	RM73B2A101J RN resistor (CP)	5	

LQ5C PCB Rev. 4 4YA4046-1670G8 (2/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
18	R46-R48, R67, R79, R560, R562-R564, R5 73, R576	323A5003J0102	RM73B2A102J RN resistor (CP)	11	
19	R507, R565, R566, R671	323A5003J0103	RM73B2A103J RN resistor (CP)	4	
20	R86, R575	323A5003J0112	RM73B2A112J RN resistor (CP)	2	
21	R26, R55, R74	323A5003J0122	RM73B2A122J RN resistor (CP)	3	
22	R76	323A5003J0125	RM73B2A125J RN resistor (CP)	1	
23	R22, R33, R34, R57, R73, R590, R648	323A5003J0151	RM73B2A151J RN resistor (CP)	7	
24	R533	323A5003J0153	RM73B2A153J RN resistor (CP)	1	
25	R693	323A5003J0183	RM73B2A183J RN resistor (CP)	1	
26	R59, R65, R531, R532	323A5003J0202	RM73B2A202J RN resistor (CP)	4	
27	R508	323A5003J0203	RM73B2A203J RN resistor (CP)	1	
28	R552-R559	323A5003J0220	RM73B2A220J RN resistor (CP)	8	
29	R6, R7, R9, R10, R12, R13, R20, R91, R92, R167, R523, R524, R534, R535	323A5003J0241	RM73B2A241J RN resistor (CP)	14	
30	R25, R54, R81	323A5003J00272	RM73B2A272J RN resistor (CP)	3	
31	R511-R515	323A5003J0331	RM73B2A331J RN resistor (CP)	5	
32	R77, R151-R166	323A5003J0332	RM73BA332J RN resistor (CP)	17	
33	R630	323A5003J0470	RM73B2A470J RN resistor (CP)	1	

LQ5C PCB Rev. 4 4YA4046-1670G8 (3/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
34	R17, R574	323A5003J0471	RM73B2A471J RN resistor (CP)	2	
35	R526, R527, R572, R601-R603	323A5003J0472	RM73B2A472J RN resistor (CP)	6	
36					
37	R70, R72	323A5003J0560	RM73B2A560J RN resistor (CP)	2	
38	R609-R612	323A5003J0561	RM73B2A561J RN resistor (CP)	4	
39	R615, R616, R624, R692	323A5003J0562	RM73B2A562J RN resistor (CP)	4	
40	R78	323A5003J0564	RM73B2A564J RN resistor (CP)	1	
41	R8, R11. R14, R15, R21, R516	323A5003J0680	RM73B2A680J RN resistor (CP)	6	
42	R23, R53	323A5003J0681	RM73B2A681J RN resistor (CP)	2	
43	L3, L9, L10, L12, L16, R41, R45, R58, R618, R619, R621, R631-R633, S8, S501, C12, C601, C622	323A5003P0001	2125JPW Chip jumper (CP)	19	
44	R96	323A5019J0750	ERJ-12YJ750 RN resistor (CP)	1	
45	R87-R90	324A1001J0339	MSF1/2B3.3ΩJ RS resistor (CP)	4	
46	R1-R5, R517-R520	334A5003J0680	MNR34J680 Block resistor (CP)	9	
47	C625, C626	303A3007C0680	CC2012CH1H680J 50V CC capacitor (CP)	2	
48	C526	303A3007K0561	CC2012SL1H561J 50V CC capacitor (CP)	1	
49	C15, C16, C509, C512, C517, C522, C527	303A6008K3102	CK2012B1H102K 50V CK capacitor (CP)	7	

LQ5C PCB Rev. 4 4YA4046-1670G8 (4/6)

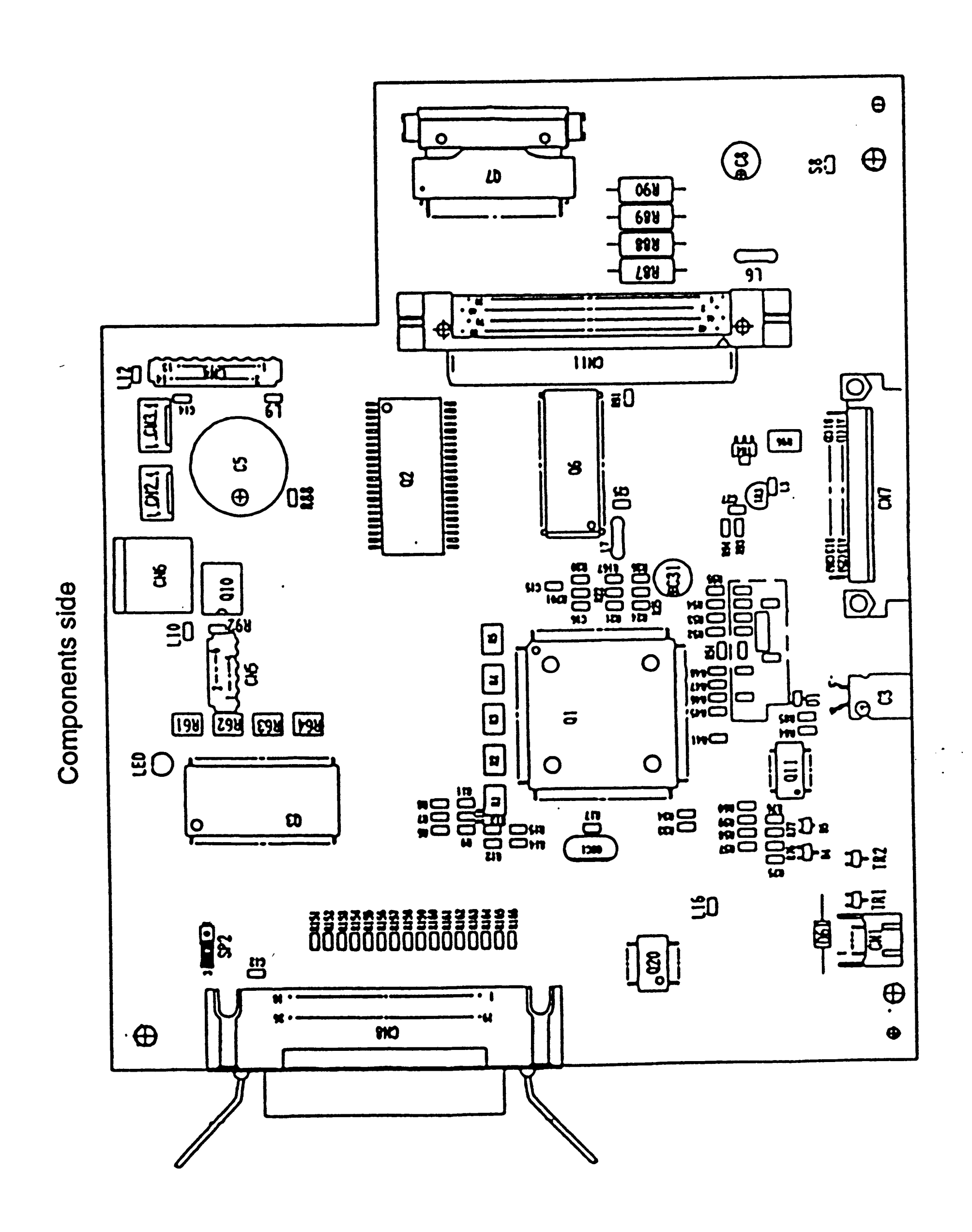
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
50	C505, C506, C513, C528, C603, C609, C620	303A6008Z1105	CK2012F1C105Z 16V CK capacitor(CP) 1UF	7	
51	C208, C508, C516, C518, C530, C543, C607, C650, C651, C14	303A6008Z2104	CK2012F1E104Z 25V CK capacitor (CP)	10	
52	C27	303A6008Z3103	CK2012F1H103Z 50V CK capacitor (CP)	1	
53	C3	304A1007C1221	SXE16VB-220 16V CE capacitor 220UF	1	
54	C8	304A1115H1470	KME50VB-47 50V CE capacitor 47UF	1	
55	C5	304A1137A1332	UVS1A332MHA 10V CE capacitor 3300UF	1	
56					
57	Q20	700A0003N0007	7407FP BIP Digital IC (SO)	1	
58	Q11	720A0503N0007	NJM2901/UPC339G2 BIP linear IC (SO)	1	
59	TR3	720A1050M9007	TL431CLP BIP linear IC	1	
60	Q4, Q5	802A0003N2602	514260JP-80 MOS-D-RAM (SO)	2	
61	Q2	817A3632N0016	MX23C8100MC-10-0016 MOS-MROM (SO)	1	
62	Q10	816A0303M0000	93LC46A-NW MOS-EEPROM	1	
63	Q7	720A1821M0004	ECN1351SP1 BIP linear IC	1	
64					
65	L6, L7	342A1009P2222	DSS306-0AE222Z EMI filter	2	

LQ5C PCB Rev. 4 4YA4046-1670G8 (5/6)

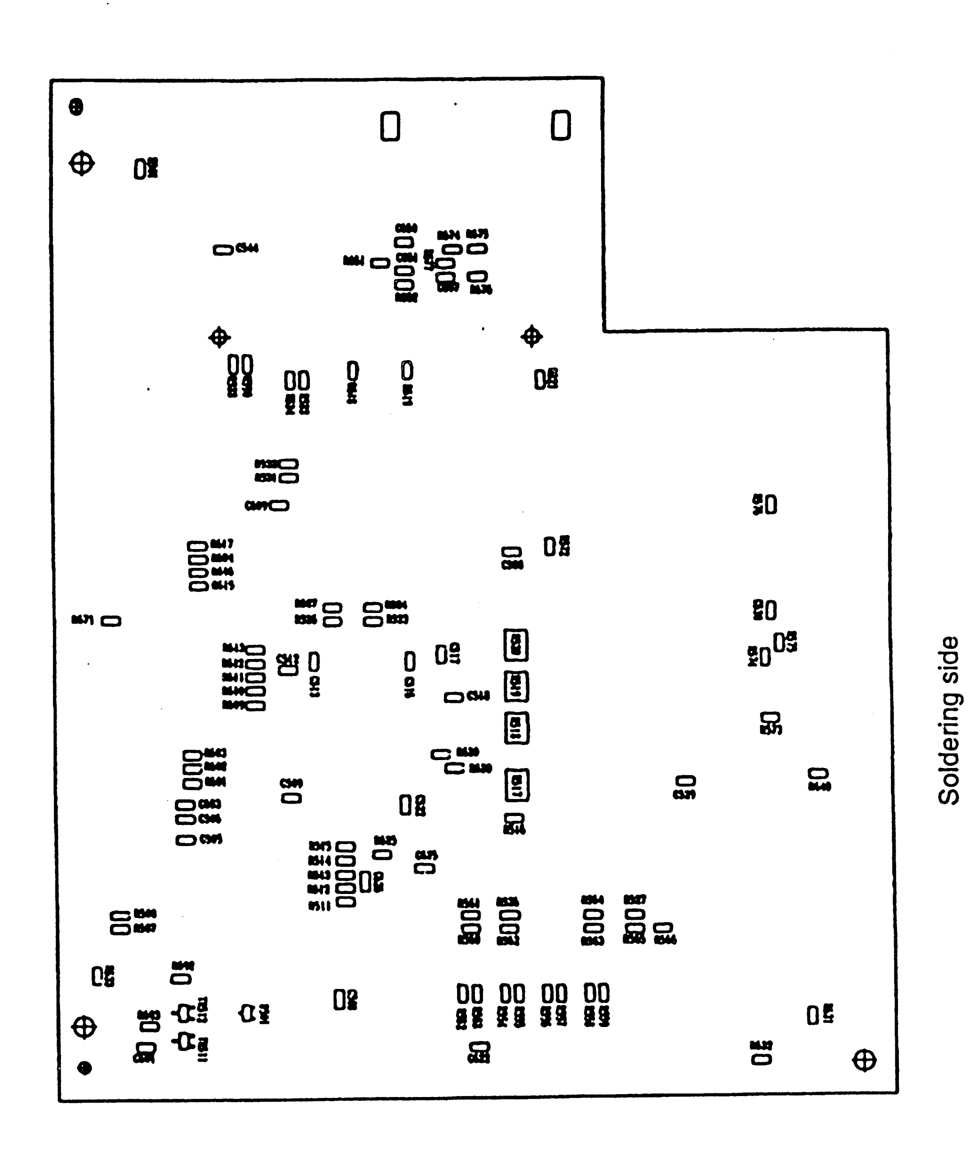
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
66	L14	342A1012P2101	ZJSC-2R2-101 EMI filter	1	
67					
68	Q1	851A0940N0041	MHM2029-002K MOS-CPU (FP)	1	
69					
70	CN7	224A3222P0261	128A-026P2B-L14N PC connector	1	
71	CN4	224A3590P0140	ZC-014 PC connector	1	
72	CN8	220A1783P0362	57RE-40360-730B-D29 square-shaped connector	1	
73	CN1	224A3528P0030	S3B-XH-A PC connector	1	
74	CN2, CN3	224A3357P0040	00-8263-0412-00-000 PC connector	2	
75	CN11	224A35516P0800	PQ80A2FA PC connector	1	
76	CN6	221A1630P0081	TCS7597-01-401 round type connector	1	
77					
78	TR4	603A1132N0001S	2SD1623S NPN-LF-TR (CP)	1	
79	TR2, TR511	602A1035N0019	DTC123YK NPN-HF-TR (CP)	2	
80	TR1, TR512	600A1032N0010	2SA1338 PNP-HF-TR (CP)	2	
81					
82	SP2	224A4082P0030	IMSA9202B-1-03Z013GF PC connector	1	

LQ5C PCB Rev. 4 4YA4046-1670G8 (6/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
84	2	224A4080P0020	IMSA-9206H-GF PC connector	1	
85					
86	0SC1	381A1045B0017	CST12.288MTW ceramic oscillator	1	
87					
88	3	4PP4083-6254P001	Push spring	1	



LQ6C PCB Rev. 3 4YA4046-1671G1 1/2



LQ6C PCB Rev. 3 4YA4046-1671G1 2/2

LQ6C PCB Rev. 3 4YA4046-1671G1 (1/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1					
2					
3	D1, D5, D501	611A0000N0001	SS100MA80VACP Signal DI (CP)	3	
4	D4	613A0233M0222B	RD15M-B2 Zener-DI (CP)	1	
5	D6	613A2232L0182	RD10F-B Zener-DI	1	
6	LED	650A0229M0018	SEL3910D-YZ LED	1	
7					
8	R625	323A5003F0105	RM73B2A105F RN resistor (CP)	1	
9	R674	323A5003F0112	RM73B2A112F RN resistor (CP)	1	
10	R675, R677	323A5003F0152	RM73B2A152F RN resistor (CP)	2	
11	R94	323A5003F0201	RM73B2A201F RN resistor (CP)	1	
12	R60, R84, R617	323A5003F0242	RM73B2A242F RN resistor (CP)	3	
13	R75	323A5003F0392	RM73B2A392F RN resistor (CP)	1	
14	R85	323A5003F0393	RM73B2A393F RN resistor (CP)	1	
15	R95	323A5003F0621	RM73B2A621F RN resistor (CP)	1	
16	R651, R652, R676	323A5003F0821	RM73B2A821F RN resistor (CP)	3	
17	R51, R52, R71, R561, R613	323A5003J0101	RM73B2A101J RN resistor (CP)	5	

LQ6C PCB Rev. 3 4YA4046-1671G1 (2/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
18	R46-R48, R67, R79, R560, R562-R564, R573, R576	323A5003J0102	RM73B2A102J RN resistor (CP)	11	
19	R562-R564, R573, R576				
20					
21	R507, R565, R566, R671	323A5003J0103	RM73B2A103J RN resistor (CP)	4	
22	R86, R575	323A5003J0112	RM73B2A112J RN resistor (CP)	2	
23	R26, R55, R74	323A5003J0122	RM73B2A122J RN resistor (CP)	3	
24	R22, R33, R34, R57, R73, R590, R648	323A5003J0151	RM73B2A151J RN resistor (CP)	7	
25	R76	323A5003J0125	RM73B2A125J RN resistor (CP)	1	
26	R533	323A5003J0153	RM73B2A153J RN resistor (CP)	1	
27	R693	323A5003J0183	RM73B2A183J RN resistor (CP)	1	
28	R59, R65, R531, R532	323A5003J0202	RM73B2A202J RN resistor (CP)	4	
29	R508	323A5003J0203	RM73B2A203J RN resistor (CP)	1	
30	R552-R559	323A5003J0220	RM73B2A220J RN resistor (CP)	8	
31	R6, R7, R9, R10, R12, R13, R20, R91, R92, R167, R523, R524, R534, R535, R701	323A5003J0241	RM73B2A241J RN resistor (CP)	15	
32	R25, R54, R81	323A5003J0272	RM73B2A272J RN resistor (CP)	3	
33	R511-R515	323A5003J0331	RM73B2A331J RN resistor (CP)	5	
34	R77, R151-R166	323A5003J0332	RM73B2A332J RN resistor (CP)	17	

LQ6C PCB Rev. 3 4YA4046-1671G1 (3/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
35	R17, R574	323A5003J0471	RM73B2A471J RN resistor (CP)	2	
36	R526, R527, R572, R601-R603	323A5003J0472	RM73B2A472J RN resistor (CP)	6	
37	R70, R72	323A5003J0560	RM73B2A560J RN resistor (CP)	2	
38	R609-R612	323A5003J0561	RM73B2A561J RN resistor (CP)	4	
39	R624, R692	323A5003J0562	RM73B2A562J RN resistor (CP)	2	
40	R78	323A5003J0564	RM73B2A564J RN resistor (CP)	1	
41	R8, R11, R14, R15, R21, R516	323A5003J0680	RM73B2A680J RN resistor (CP)	6	
42	R24, R53	323A5003J0681	RM73B2A681J RN resistor (CP)	2	
43	L3, L9, L10, L12, L16, R41, R45, R58, R618, R619, R621, R631-R633, S8, S501, C12, C601, C622	323A5003P0001	2125JPW Chip jumper (CP)	19	
44					
45	R96	323A5019J0750	ERJ-12YJ750 RN resistor (CP)	1	
46	R87-R90	324A1001J0339	MSF1/2B3.3ΩJ RS resistor	4	
47	R1-R5, R61-R64, R517-R520	334A5003J0680	MNR34J680 Block resistor (CP)	13	
48	C625, C626	303A3007C0680	CC2012CH1H680J 50V CC capacitor (CP)	2	
49	C526	303A3007K0561	CC2012SL1H561J 50V CC capacitor (CP)	1	
50	C15, C16, C509, C512, C517, C522, C527	303A6008K3102	CK2012B1H102K 50V CK capacitor (CP)	7	

LQ6C PCB Rev. 3 4YA4046-1671G1 (4/6)

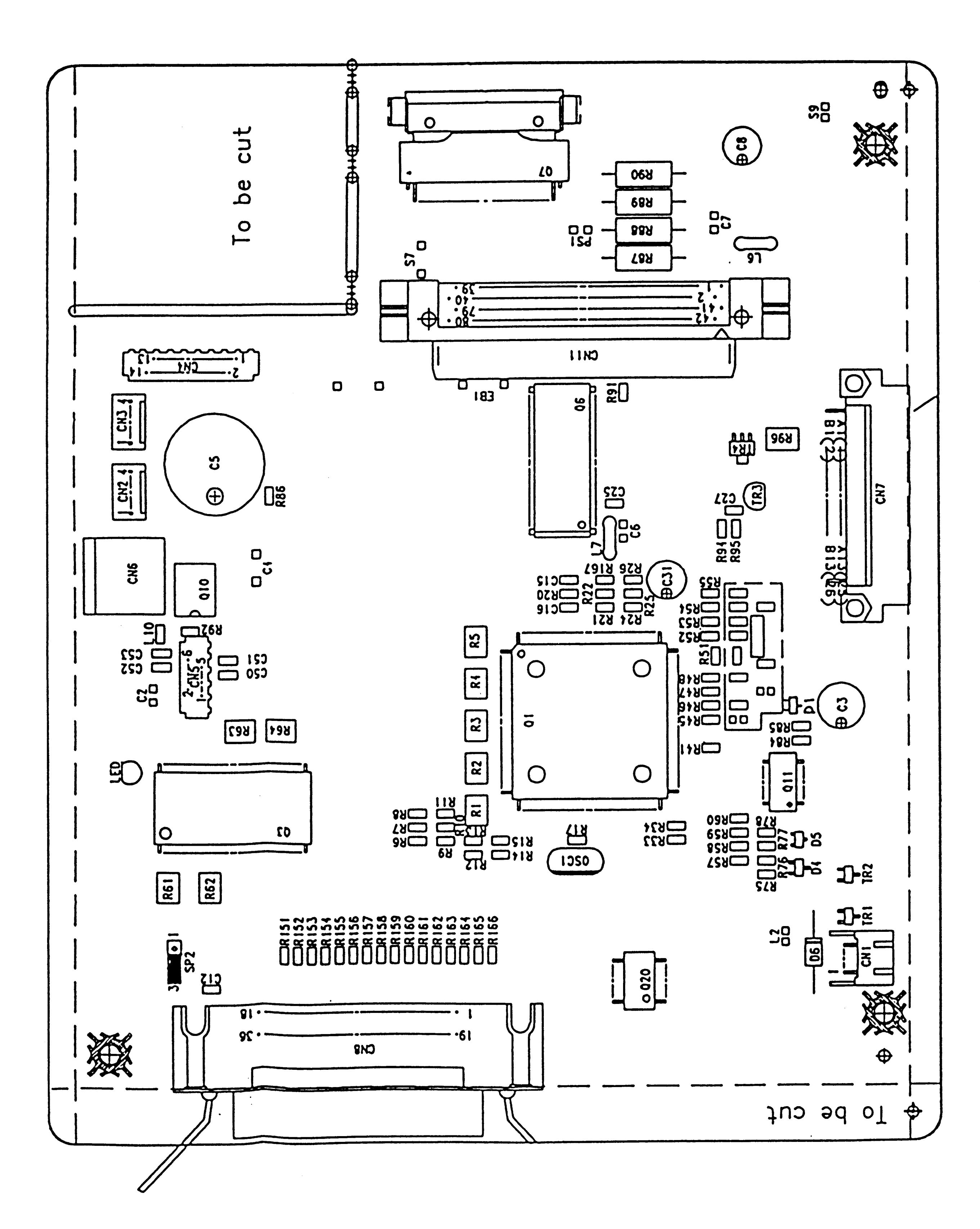
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
51	C25, C505, C506, C513, C528, C529, C609, C620	303A6008Z1105	CK2012F1C105Z 16V CK Capacitor (CP) 1UF	8	
52	C508, C516, C518, C530, C544, C607, C650, C651, C653	303A6008Z2104	CK2012F1E104Z 25V CK capacitor (CP)	9	
53					
54	C14, C27	303A6008Z3103	CK2012F1H103Z 50V CK capacitor (CP)	2	
55	C3	304A1034C1221	SXE16VB-220 16V CE capacitor 220UF	1	
56	C8	304A1115H1470	KME50VB-47 50V CE capacitor 47UF	1	
57	C5	304A1137A1332	UVS1A332MHA 10V CE capacitor 3300UF	1	
58					
59	Q20	700A0003N0007	7407FP BIP digital IC (SO)	1	
60	Q11	720A0503N0007	NJM2901M/UPC339G2 BIP linear IC (SO)	1	
61	TR3	720A1050M9007	TL431CLP BIP linear IC	1	
62					
63	Q10	816A0303M0000	93LC46A-NW MOS-EEPROM	1	
64	Q7	720A1821M0004	ECN1351SP1 BIP linear IC	1	
65					
66	L6, L7	342A1009P2222	DSS306-0AE222Z EMI filter	2	
67	L14	342A1012P2101	ZJSC-2R2-101 EMI filter	1	

LQ6C PCB Rev. 3 4YA4046-1671G1 (5/6)

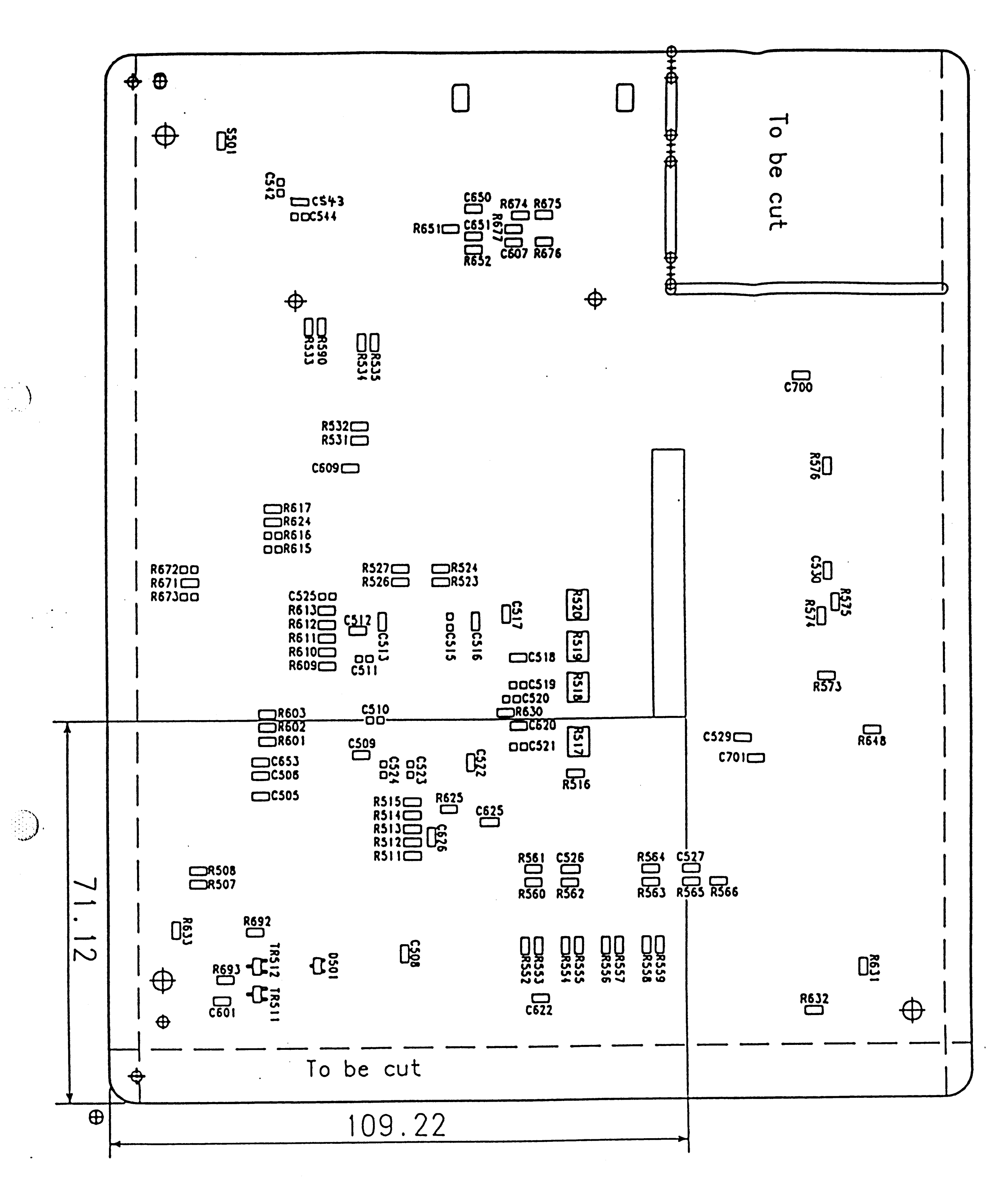
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
68	Q3		32 Mb MASK ROM	1	
69	Q1	851A0940N0041	MHM2029-002K MOS-CPU (FP)	1	
70	Q6		16Mb DRAM	1	
71	CN7	224A3222P0261	128A-026P2B-I14N PC connector	1	
72	CN4	224A3590P0140	ZC-014 PC connector	1	
73	CN8	220A1783P0362	57RE-40360-730B-D29 square shape connector	1	
74	CN1	224A3528P0030	S3B-XH-A PC connector	1	
75	CN2, CN3	224A3357P0040	00-8263-0412-00-000 PC connector	2	
76	CN5	224A3590P0060	ZC-006 PC connector	1	
77	CN11	224A3516P0800	PQ80A2FA PC connector	1	
78	CN6	221A1630P0081	TCS7597-01-401 Round type connector	1	
79					
80	TR4	603A1132N0001S	2SD1623S NPN-LF-TR (CP)	1	
81	TR2, TR511	602A1035N0019	DTC123YK NPN-HF-TR (CP)	2	
82	TR1, TR512	600A1032N0010	2SA1338 PNP-HF-TR (CP)	2	
83					
84	SP2	224A4082P0030	IMSA9202B-1-03Z013GF PC connector	1	
85	2	224A4080P0020	IMSA-9206H-GF PC connector	1	

LQ6C PCB Rev. 3 4YA4046-1671G1 (6/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
86	OSC1	381A1045B0017	CST12.288MTW Ceramic oscillator	1	
87					
88	3	4PP4083-6254P001	Push spring	1	



LQ6C PCB Rev. 4 4YA4046-1671G11 1/2



LQ6C PCB Rev. 4 4YA4046-1671G11 2/2

LQ6C PCB Rev. 4 4YA4046-1671G11 (1/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1		2PU4005-3815P001	LQ6C-Printed wiring board (2 layers)	1	
2					
3	D1, D5, D501	611A0000N0001	SS100MA80VACP Signal DI (CP)	3	
4	D4	613A0233M0222B	RD15M-B2 Zener-DI (CP)	1	
5	D6	613A2232L0182	RD10F-B Zener-DI	1	
6	LED	650A0229M0018	SEL3910D-YZ LED	1	
7					
8	R625	323A5003F0105	RM73B2A105F RN resistor (CP)	1	
9	R674	323A5003F0112	RM73B2A112F RN resistor (CP)	1	
10	R675, R677	323A5003F0152	RM73B2A152F RN resistor (CP)	2	
11	R94	323A5003F0201	RM73B2A201F RN resistor (CP)	1	
12	R60, R84, R617	323A5003F0242	RM73B2A242F RN resistor (CP)	3	
13	R75	323A5003F0392	RM73B2A392F RN resistor (CP)	1	
14	R85	323A5003F0393	RM73B2A393F RN resistor (CP)	1	
15	R95	323A5003F0621	RM73B2A621F RN resistor (CP)	1	
16	R651, R652, R676	323A5003F0821	RM73B2A821F RN resistor (CP)	3	
17	R51, R52, R71, R561, R613	323A5003J0101	RM73B2A101J RN resistor (CP)	5	

LQ6C PCB Rev. 4 4YA4046-1671G11 (2/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
18	R46-R48, R67, R79, R560, R562-R564, R573, R576	323A5003J0102	RM73B2A102J RN resistor (CP)	11	
19					
20	R507, R565, R566, R671	323A5003J0103	RM73B2A103J RN resistor (CP)	4	
21	R86, R575	323A5003J0112	RM73B2A112J RN resistor (CP)	2	
22	R26, R55, R74	323A5003J0122	RM73B2A122J RN resistor (CP)	3	
23	R22, R33, R34, R57, R73, R590, R648	323A5003J0151	RM73B2A151J RN resistor (CP)	7	
24					
25	R76	323A5003J0125	RM73B2A125J RN resistor (CP)	1	
26	R533	323A5003J0153	RM73B2A153J RN resistor (CP)	1	
27	R693	323A5003J0183	RM73B2A183J RN resistor (CP)	1	
28	R59, R65, R531, R532	323A5003J0202	RM73B2A202J RN resistor (CP)	4	
29	R508	323A5003J0203	RM73B2A203J RN resistor (CP)	1	
30	R552-R559	323A5003J0220	RM73B2A220J RN resistor (CP)	8	
31	R8, R11, R516	323A5003J0221	RM73B2A221J RN resistor (CP)	3	
32	R6, R7, R9, R10, R12, R13, R20, R91, R92, R167, R523, R524, R534, R535	323A5003J0241	RM73B2A241J RN resistor (CP)	14	
33					
34					

LQ6C PCB Rev. 4 4YA4046-1671G11 (3/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
35	R25, R54, R81	323A5003J0272	RM73B2A272J RN resistor (CP)	3	
36	R511-R515	323A5003J0331	RM73B2A331J RN resistor (CP)	5	
37	R77, R151-R166	323A5003J0332	RM73B2A332J RN resistor (CP)	17	
38	R630	323A5003J0470	RM73B2A470J RN resistor (CP)	1	
39	R17, R574	323A5003J0471	RM73B2A471J RN resistor (CP)	2	
40	R526, R527, R601-R603	323A5003J0472	RM73B2A472J RN resistor (CP)	5	
41	R70, R72	323A5003J0560	RM73B2A560J RN resistor (CP)	2	
42	R609-R612	323A5003J0561	RM73B2A561J RN resistor (CP)	4	
43	R624, R692	323A5003J0562	RM73B2A562J RN resistor (CP)	2	
44	R78	323A5003J0564	RM73B2A564J RN resistor (CP)	1	
45	R14, R15, R21	323A5003J0680	RM73B2A680J RN resistor (CP)	3	
46	R24, R53	323A5003J0681	RM73B2A681J RN resistor (CP)	2	
47	L10, R41, R45, R58, R631-R633, S501, C12, C601, C622	323A5003P0001	2125JPW Chip jumper (CP)	11	
48					
49					
50	R96	323A5019J0750	ERJ-12YJ750 RN resistor (CP)	1	
51	R87-R90	324A1001J0339	MSF1/2B3.3ΩJ RS resistor	4	

LQ6C PCB Rev. 4 4YA4046-1671G11 (4/6)

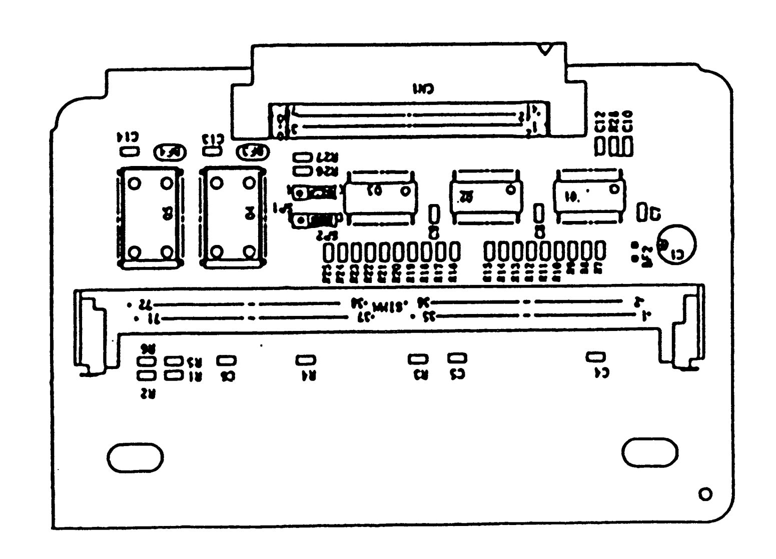
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
52	R4, R5, R519, R520	334A5003J0680	MNR34J680 Block resistor (CP)	4	
53	R1-R3, R517, R518	334A5003J0221	MNR34J221 Block resistor (CP)	5	
54	R61-R64	334A5003J0431	MNR34J431 Block resistor (CP)	4	
55	C50-C53	303A3007C0101	CC2012CH1H101J CC capacitor (CP)	4	
56	C625, C626	303A3007C0680	CC2012CH1H680J CC capacitor (CP)	2	
57	C526	303A3007K0561	CC2012SL1H561J 50V CC capacitor (CP)	1	
58	C15, C16, C509, C512, C517, C522, C527	303A6008K3102	CK2012B1H102K 50V CK capacitor (CP)	7	
59					
60	C25, C505, C506, C513, C529, C609, C620	303A6008Z1105	CK2012F1C105Z 16V CK Capacitor (CP) 1UF	7	
61					
62	C508, C516, C518, C530, C543, C607, C650, C651, C653, C700	303A6008Z2104	CK2012F1E104Z 25V CK capacitor (CP)	10	
63					
64					
65					
66	C27	303A6008Z3103	CK2012F1H103Z 50V CK capacitor (CP)	1	
67	C3	304A1007C1221	URS1C221MNA1FA 16V CE capacitor 220UF	1	
68	C8	304A1115H1470	KME50VB-47 50V CE capacitor 47UF	1	

LQ6C PCB Rev. 4 4YA4046-1671G11 (5/6)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
69	C5	304A1137A1332	UVS1A332MHA 10V CE capacitor 3300UF	1	
70	C31	304A1046C1100	16MS5-10M CE capacitor	1	
71					
72	Q20	700A0003N0007	7407FP BIP digital IC (SO)	1	
73	Q11	720A0503N0007	NJM2901M/UPC339G2 BIP linear IC (SO)	1	
74	TR3	720A1050M9007	TL431CLP BIP linear IC	1	
75					
76	Q10	816A0303M0000	93LC46A-NW MOS-EEPROM	1	
77	Q7	720A1821M0004	ECN1351SP1 BIP linear IC	1	
78					
79	L6, L7	342A1009P2222	DSS306-0AE222Z EMI filter	2	
80	L14	342A1012P2101	ZJSC-2R2-101 EMI filter	1	
81					
82	Q1	851A0940N0041	MHM2029-002K MOS-CPU (FP)	1	
83	Q6	8020003N4603	5118160JP-70 Memory-MOS DRAM	1	
84	Q3	817A5620N0002	TC5332410F-R809 MOS-MROM (SO)	1	
85					
86	CN7	224A3222P0261	128A-026P2B-L14N PC connector	1	

LQ6C PCB Rev. 4 4YA4046-1671G11 (6/6)

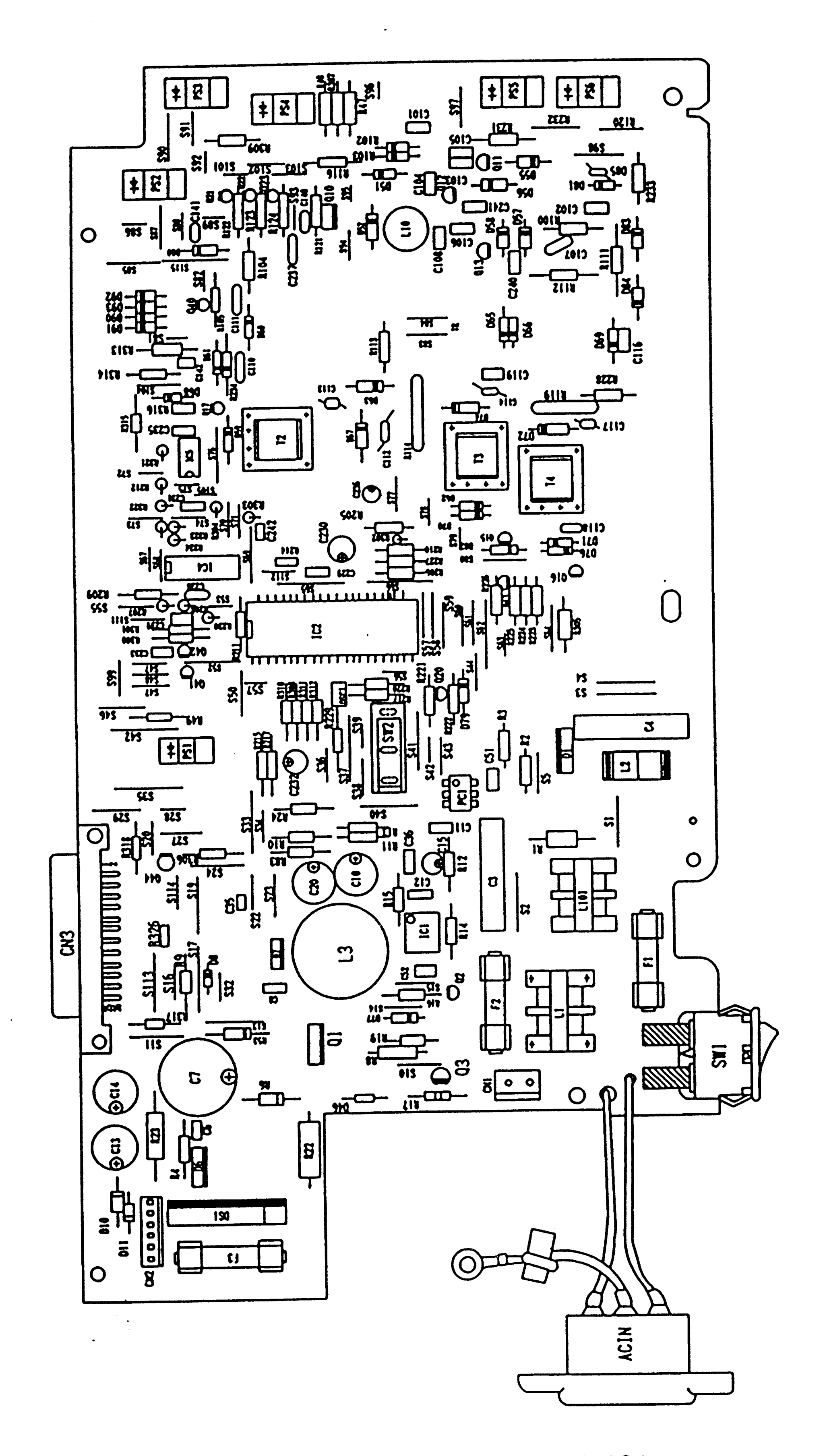
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
87	CN4	224A3590P0140	ZC-014 PC connector	1	
88	CN8	2201001P0360	57RE-40360-830B-D29 Connector-RECT	1	
89	CN1	224A3528P0030	S3B-XH-A PC connector	1	
90	CN2, CN3	224A3357P0040	00-8263-0412-00-000 PC connector	2	
91	CN5	224A3590P0060	ZC-006 PC connector	1	
92	CN11	224A3516P0800	PQ80A2FA PC connector	1	
93	CN6	221A1630P0081	TCS7597-01-401 Round type connector	1	
94					
95	TR4	603A1132N0001S	2SD1623S NPN-LF-TR (CP)	1	
96	TR2, TR511	602A1035N0019	DTC123YK NPN-HF-TR (CP)	2	
97	TR1, TR512	600A1032N0010	2SA1338 PNP-HF-TR (CP)	2	
98					
99	SP2	224A4082P0030	IMSA9202B-1-03Z013GF PC connector	1	
100	2	224A4080P0020	IMSA-9206H-GF PC connector	1	
101					
102	OSC1	381A1045B0017	CST12.288MTW Ceramic oscillator	1	
103					
104	3	4PP4083-6254P001	Push spring	1	



LQME-PCB 4YA4121-1058G11 Rev. 2

LQME-PCB 4YA4121-1058G11

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1	R7, R19, R21, R24, R25	323A5003J0101	RM73B2A101J RN resistor (CP)	5	
2	R1-R3, R5, R6, R26-R28	323A5003J0472	RM73B2A472J RN resistor (CP)	8	
3	R4, R8-R18, R20, R22, R23	323A5003J0510	RM73B2A510J RN resistor (CP)	15	
4	C10	303A3007C0680	CC2012CH1H680J 50V CC capacitor (CP)	1	
5	C4-C6, C12	303A6008Z1105	CK2012F1C105Z 16V CK capacitor(CP) 1UF	4	
6	C7-C9, C13, C14	303A6008Z2104	CK2012F1E104Z 25V CK capacitor (CP)	5	
7	C1	304A1046J0101	6.3MS5-100M 6.3V CE capacitor 100UF	1	
8	Q1-Q3	700A2550N0244B	SN74ALS244CNS BIP digital IC (SO)	3	
9	Q4, Q5	802A0024N2624	MSM514800-80JS MOS-D-RAM (SO)	2	
10	BF3-BF4	377A1115P1309	ZBF253D-01 beads filter	2	
11	CN1	224A3515P0800	PQ80A2MA PC connector	1	
12	SP1, SP2	224A4082P0030	IMSA9202B-1-03Z013GF PC connector	2	
13	2	224A4080P0020	IMSA-9206H-GF PC connector	2	
14	SIMM	245A1059P0720	3955-2TT-40721A IC socket	1	



OLER-Printed Circuit Board 4YB4049-7101G1

OLER-Printed Circuit Board 4YB4049-7101G1 (1/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1					
2					
3	D6	620A0026M0002	TF341M Gate thyristor OFF	1	
4	DS1	610A1003M0001	RBV-402/D3SBA20 Rectifier DI	1	
5	D10, 11, 46, 77	610A0003M0001	EM01Z/SM1XN02/ DSM1D2 rectifier DI	4	
6	D51, 55-59, 62, 70, 71, 81, 83	610A0226M0016	EU02A rectifier DI	11	
7	D7	610A0226M0017	FML-G12S rectifier DI	1	
8	D68, 69, 60, 61, 80, 90-93	611A0003L0001	1S953/1S2075K/1S2473 signal DI	9	
9	D79	613A1231L0072	RD3.6E-B zener DI	1	
10	D8	613A1231L0122	RD5.6E-B zener DI	1	
11	D76	613A1231L0262B	RD22E-B2 zener DI	1	
12	D82	613A1231L0282A	RD27E-B1 zener DI	1	
13	D52, 84	613A2003M0001	1ZB300-Y/Z zener DI	2	
14	D65, 66	613A2258M0350	1ZB390 zener DI	2	
15	D63, 67, 72, 74	610A0003M0002	DHM3FJ60/ESJA58-06 rectifier DI	4	
16	D85	632A0200M1470	D05-471 varistor	1	

OLER-Printed Circuit Board 4YB4049-7101G1 (2/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
17					
18	R207, 208, 230, 212, 302, 303	321A3412J0102	RD1/6-1KΩJ (vertical) RD resistor	6	
19	R322	321A3412J0183	RD1/6-18KΩ J (vertical) RD resistor	1	
20	R321, 323, 324	321A3412J0243	RD1/6-24KΩJ (vertical) RD resistor	3	
21	R325	321A3412J0623	RD1/6-62KΩJ (vertical) RD resistor	1	
22	R304	321A3412J0182	RD1/6-1.8KΩJ (vertical) RD resistor	1	
23	R6, 226	321A1421J0301	RD1/4Y300ΩJ RD resistor	2	
24	R9, 234	321A1421J0330	RD1/4Y33ΩJ RD resistor	2	
25	R12, 215	321A1421J0153	RD1/4Y15KΩJ RD resistor	2	
26	R13, 217	321A1421J0362	RD1/4Y3.6KΩJ RD resistor	2	
27	R14	321A1421J0154	RD1/4Y150KΩJ RD resistor	1	
28	R210, 211, 113, 15, 305	321A1421J0104	RD1/4Y100KΩJ RD resistor	5	
29	R16	321A421J0242	RD1/4Y2.4KΩJ RD resistor	1	
30	R4, 17, 103, 214	321A1421J0102	RD1/4Y1KΩJ RD resistor	4	
31	R19, 102, 116	321A1421J0331	RD1/4Y330ΩJ RD resistor	3	
32	R24	321A1421J0151	RD1/4Y150ΩJ RD resistor	1	

OLER-Printed Circuit Board 4YB4049-7101G1 (3/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
33	R53, 105	321A1421J0163	RD1/4Y16KΩJ RD resistor	2	
34	R220, 228, 233	321A1421J0105	RD1/4Y1MΩJ RD resistor	3	
35	R219, 313	321A1421J0222	RD1/4Y2.2KΩJ RD resistor	2	
36	R121-124, 227, 229, 300-301	321A1421J0512	RD1/4Y5.1KΩJ RD resistor	8	
37	R47-49	321A1421J0131	RD1/4Y130ΩJ RD resistor	3	
38	R221, 306	321A1421J0152	RD1/4Y1.5KΩJ RD resistor	2	
39	R222	321A1421J0271	RD1/4Y270ΩJ RD resistor	1	
40	R223-225	321A1421J0511	RD1/4Y510ΩJ RD resistor	3	
41	R100	321A1421J0305	RD1/4Y3MΩJ RD resistor	1	
42	R104	321A1421J0753	RD1/4Y75KΩJ RD resistor	1	
43	R209	321A1421J0304	RD1/4Y300KΩJ RD resistor	1	
44	R307, 308, 309, 312	321A1421J0103	RD1/4Y10KΩJ RD resistor	4	
45	R310, 311	321A1421J0203	RD1/4Y20KΩJ RD resistor	2	
46	R10	323A1222F0203	RNL1/4C3F20KΩ RN resistor	1	
47	R11, 205, 206	323A1222F0242	RNL1/4C3F2.4KΩ RN resistor	3	
48	R83	323A1222F0102	RNL1/4C3F1.0KΩ RN resistor	1	
49	R316	323A4021F0394	RNF1/4C3-390KΩF RN resistor	1	

OLER-Printed Circuit Board 4YB4049-7101G1 (4/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
50	R318	323A1222F0222	RNL1/4C3F2.2KΩ RN resistor	1	
51	R314	323A1222F0183	RNL1/4C3F18KΩ RN resistor	1	
52	R315	323A1222F0123	RNL1/4C3F12KΩ RN resistor	1	
53	R317	323A1222F0563	RNL1/4C3F56KΩ RN resistor	1	
54	R326	323A1222F0223	RNL1/4C3F22KΩ RN resistor	1	
55	R1	321A1431J0105	RD1/2Y1MΩJ RD resistor	1	
56	R2, 3	327A1001J0101	FMR1/2-100ΩJ fuse resistor	2	
57	R114, 119	326A3021K0107	HM-38-100MK RK resistor	2	
58	R111, 112, 231	323A1029J0106	HMP1/4-106J RN resistor	3	
59	R8	324A3024J0272	MOS2-2.7KΩJL RS resistor	1	
60	R22, 23	324A3024J0391	MOS2-390ΩJL RS resistor	2	
61					
62	C118	306A4103J2103	CQMF92PP2A103J-F0 CQ capacitor 0.010UF	1	
63	C3	306A2277M5104	MKC-S-104M CF capacitor 0.1UF	1	
64	C4	340A2014P1001	ECQ-J0187Y spark killer	1	
65	C6, 51, 35, 52, 239, 108, 237, C233, 103, 104, 110, 111, 140-142, 242	303A4019Z3104	FK16Y5V1H104Z CK capacitor	16	

OLER-Printed Circuit Board 4YB4049-7101G1 (5/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
66	C8, 231, 235	302A4003K6331	DD05-63B331K500 500V CK capacitor 330PF	3	
67	C10, 20	304A1179J0222	ECA0JM222 6.3V CE capacitor 2200UF	2	
68	C11	302A4003K6102	DD07-63B102K500 500V CK capacitor 1000PF	1	
69	C12	302A4003K6222	DD09-63B222K500 500V CK capacitor 2200PF	1	
70	C15	304A1123C1470	SME16VB-47-0A 16V CE capacitor 47UF	1	
71	C230	304A1046E1330	25MS5-33M 25V CE capacitor 33UF	1	
72	C232, 236	304A1123J1100	SME63VB-10-0A 63V CE capacitor 10UF	2	
73	C13, 14	304A1179C1102	ECA1CM102 16V CE capacitor 1000UF	2	
74	C228, 229	303A4115M3102	CK92C1H102MS 50V CK capacitor 0.001UF	2	
75	C116	303A4019Z3473	FK16Y5V1H473Z CK capacitor	1	
76	C240, 241	302A1202K0390	DD05-63SL390J500 CC capacitor 39PF	2	

OLER-Printed Circuit Board 4YB4049-7101G1 (6/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
77	C101, 102, 106	302A4003K6471	DD05-63B471K500 500V CK capacitor 470PF	3	
78	C105, 107, 119	302A4028K0471A	DE0705B471K1K 1KV CK capacitor 470PF	3	
79	C113, 114, 117	302A4028K2471	DE0707B471K3K 3.15KV CK capacitor 470PF	3	
80	C7	304A1005H1332	UVR1H332MHA1CA 50V CE capacitor 3300UF	1	
81	C112	302A4028K4471	DE1010B471K6K 6KV CK capacitor 470PF	1	
82	C36	303A4115M3681	CK92C1H681MS 50V CK capacitor 680PF	1	
83	Q1	601A1226M0001	2SB1258 PNP-LF-TR	1	
84	Q3, 41, 42	602A1025M0006Y	2SC1815-Y NPN-HF-TR	3	
85	Q10	602A1223M0039	2SC2752 NPN-HF-TR	1	
86	Q2, 40, 43, 44	602A1032M0004	2SC3400 NPN-HF-TR	4	
87	Q20	600A1003M0001	2SA608SP/2SA933S PNP-HF-TR	1	
88	Q21-23	600A1035M0005	DTA114S PNP-HF-TR	3	
89	D1	622A0026M0004	TM1241I-LE-LF625 gate thyristor	1	
90	Q15-17	602A1125M0039Y	2SC2235-Y NPN-HF-TR	3	

OLER-Printed Circuit Board 4YB4049-7101G1 (7/9)

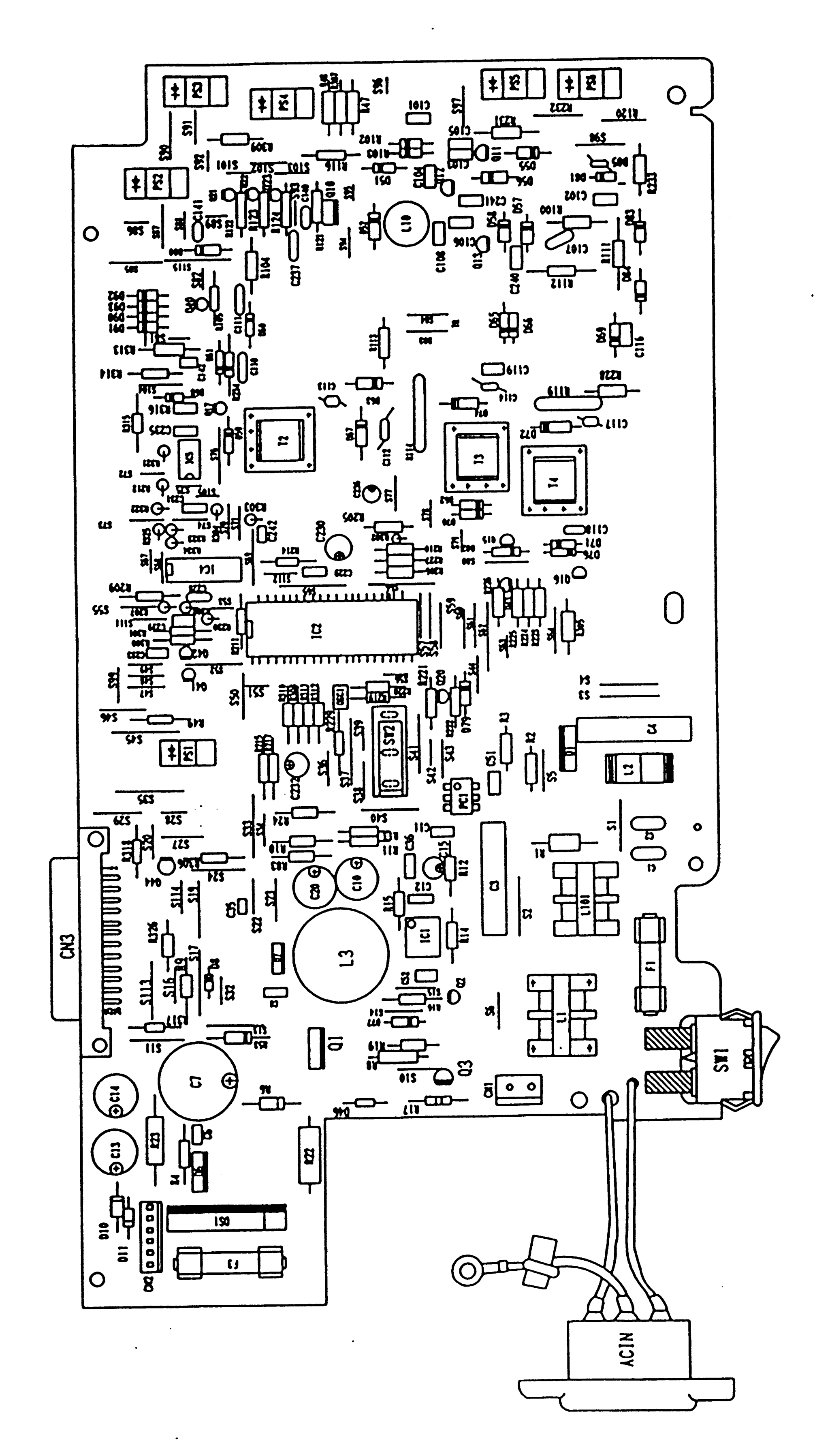
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
91	Q11, 13	622A0022M0014	BCR1AM-12 gate thyristor SW	2	
92	Q12	620A0022M0008	CR04AM-12 gate thyristor OFF	1	
93					
94					
95	IC2	702A4731M0003	LC97000A-983 MOS digital IC	1	
96	PC1	652A0203M0002	TLP666JF/S21ME4FY photo coupler	1	
97	PS1-6	652A0114M0003	SG-206 photo coupler	6	
98	IC1	720A0843M0001	FA7617P-1 BIP linear IC	1	
99	IC4	720A0000M0002	324P BIP linear IC	1	
100	IC5	720A0000M0033	358P BIP linear IC	1	
101					
102	OSC1	381A1054B0001	CST1.80MG040 ceramic oscillator	1	
103	L2	350A0221P1001	SN8S-300/SF-T8-30S P coil	1	
104	L3	350A2510P0551	SK-21P-060-550S P coil	1	
105	L101	350A2027P0200	SU16VD-40020 power supply coil	1	
106	L1	350A0223P0402	SU10V07040/ FUS325020 power supply coil	1	
107	L10	350A2511P0102	C-14576 P coil	1	
108	T2	4YB4049-7078P001	high voltage transformer	1	

OLER-Printed Circuit Board 4YB4049-7101G1 (8/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
109	T3	4YB4049-7078P002	high voltage transformer	1	
110	T4	4YB4049-7078P003	high voltage transformer	1	
111	CN1	224A3907P0020	5281-02A PC connector	1	
112	CN2	224A3357P0060	00-8263-0612-00-000 PC connector	1	
113	CN3	224A3222P0262	128A-026S2B-L14A PC connector	1	
114					
115					
116	F1	540A2076N0632	51MS063L fuse	1	
117	F2	540A2076N0162	51MS016L fuse	1	
118	F3	540A2036M1252	GGS2-1/2 fuse	1	
119	2	4LP-7142	FP-213 fuse holder	6	
120					
121	SW1	200A3220P2000	SJ-W2P4A-03BB toggle switch	1	
122	SW2	207A1025P0001	SS-5GL13	1	
123	INLET	4YS4011-2894P001	special cord	1	
124	S28, 39, 42, 32, 51, 53, 56, 67, 72, 79, 81, 82, 86, 89, 91-93, 95, 96, 101, 105	TA-0.65	0.65 tin melted copper wire	21	L=32mm P=5.0

OLER-Printed Circuit Board 4YB4049-7101G1 (9/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
125	S5, 10, 14, 15, 23, 27, 46, 29, 50, 77, 57-61, 78, 80, 83, 84, 90, 97, 64, 104, 87	TA-0.65	0.65 tin melted copper wire	24	L=32mm P=10
126	S2-4, 17, 33, 35, 37, 41, 45, 62, 65, 66, 115	TA-0.65	0.65 tin melted copper wire	13	L=32mm P=15
127	S1, 11, 13, 24, 40, 52, 69, 76, 85, 98, 113, 19, R120, R232	TA-0.65	0.65 tin melted copper wire	14	L=32mm P=12.5
128	S16, 20, 22, 34, 36, 38, 43-44, 47-49, 55, 63, 68, 70, 71, 88, 94, 99, 73, 74, 75, 102, 103, 111, 112, 114	TA-0.65	0.65 tin melted copper wire	27	L=32mm P=7.5



OLHR-Printed Circuit Board 4YB4049-7101G2

OLHR-Printed Circuit Board 4YB4049-7101G2 (1/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1					
2					
3	D6	620A0026M0002	TF341M Gate thyristor OFF	1	
4	DS1	610A1003M0001	RBV-402/D3SBA20 Rectifier DI	1	
5	D10, 11, 46, 77	610A0003M0001	EM01Z/SM1XN02/DSM1D2 rectifier DI	4	
6	D51, 55-59, 62, 70, 71, 81, 83	610A0226M0016	EU02A rectifier DI	11	
7	D7	610A0226M0017	FML-G12S rectifier DI	1	
8	D68, 69, 60, 61, 80, 90-93	611A0003L0001	1S953/1S2075K/1S2473 rectifier DI	9	
9	D79	613A1231L0072	RD3.6E-B zener DI	1	
10	D8	613A1231L0122	RD5.6E-B zener DI	1	
11	D76	613A1231L0262B	RD22E-B2 zener DI	1	
12	D82	613A1231L0282A	RD27E-B1 zener DI	1	
13	D52, 84	613A2003M0001	1ZB300-Y/Z zener DI	2	
14	D65, 66	613A2258M0350	1ZB390 zener DI	2	
15	D63, 67, 72, 74	610A0003M0002	DHM3FJ60/ESJA58-06 rectifier DI	4	
16	D85	632A0200M1470	D05-471 varistor	1	

OLHR-Printed Circuit Board 4YB4049-7101G2 (2/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
17					
18	R207, 208, 230, 212, 302, 303	321A3412J0102	RD1/6-1KΩJ (vertical) RD resistor	6	
19	R322	321A3412J0183	RD1/6-18KΩ J (vertical) RD resistor	1	
20	R321, 323, 324	321A3412J0243	RD1/6-24KΩJ (vertical) RD resistor	3	
21	R325	321A3412J0623	RD1/6-62KΩJ (vertical) RD resistor	1	
22	R304	321A3412J0182	RD1/6-1.8KΩJ (vertical) RD resistor	1	
23	R6, 226	32A1421J0301	RD1/4Y300ΩJ RD resistor	2	
24	R9, 234	321A1421J0330	RD1/4Y33ΩJ RD resistor	2	
25	R12, 215	321A1421J0153	RD1/4Y15KΩJ RD resistor	2	
26	R13, 217	321A1421J0362	RD1/4Y3.6KΩJ RD resistor	2	
27	R14	321A1421J0154	RD1/4Y150KΩJ RD resistor	1	
28	R210, 211, 113, 15, 305	321A1421J0104	RD1/4Y100KΩJ RD resistor	5	
29	R16	321A1421J0242	RD1/4Y2.4KΩJ RD resistor	1	
30	R4, 17, 103, 214	321A1421J0102	RD1/4Y1KΩJ RD resistor	4	
31	R19, 102, 116	321A1421J0331	RD1/4Y330ΩJ RD resistor	3	
32	R24	321A1421J0151	RD1/4Y150ΩJ RD resistor	1	

OLHR-Printed Circuit Board 4YB4049-7101G2 (3/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
33	R53, 105	321A1421J0163	RD1/4Y16KΩJ RD resistor	2	
34	R220, 228, 233	321A1421J0105	RD1/4Y1MΩJ RD resistor	3	
35	R219, 313	321A1421J0222	RD1/4Y2.2KΩJ RD resistor	2	
36	R121-124, 227, 229, 300-301	321A1421J0512	RD1/4Y5.1KΩJ RD resistor	8	
37	R47-49	321A1421J0131	RD1/4Y130ΩJ RD resistor	3	
38	R221, 306	321A1421J0152	RD1/4Y1.5KΩJ RD resistor	2	
39	R222	321A1421J0271	RD1/4Y270ΩJ RD resistor	1	
40	R223-225	321A1421J0511	RD1/4Y510ΩJ RD resistor	3	
41	R100	321A1421J0305	RD1/4Y3MΩJ RD resistor	1	
42	R104	321A1421J0753	RD1/4Y75KΩJ RD resistor	1	
43	R209	321A1421J0304	RD1/4Y300KΩJ RD resistor	1	
44	R307, 308, 309, 312	321A1421J0103	RD1/4Y10KΩJ RD resistor	4	
45	R310, 311	321A1421J0203	RD1/4Y20KΩJ RD resistor	2	
46	R10	323A1222F0203	RNL1/4C3F20KΩ RN resistor	1	
47	R11, 205, 206	323A1222F0242	RNL1/4C3F2.4KΩ RN resistor	3	
48	R83	323A1222F0102	RNL1/4C3F1.0KΩ RN resistor	1	
49	R316	323A4021F0394	RNF1/4C3-390KΩF RN resistor	1	

OLHR-Printed Circuit Board 4YB4049-7101G2 (4/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
50	R318	323A1222F0222	RNL1/4C3F2.2KΩ RN resistor	1	
51	R314	323A1222F0183	RNL1/4C3F18KΩ RN resistor	1	
52	R315	323A1222F0123	RNL1/4C3F12KΩ RN resistor	1	
53	R317	323A1222F0563	RNL1/4C3F56KΩ RN resistor	1	
54	R326	323A1222F0223	RNL1/4C3F22KΩ RN resistor	1	
55	R1	321A1431J0105	RD1/2Y1MΩJ RD resistor	1	
56	R2, 3	327A1001J0101	FMR1/2-100ΩJ fuse resistor	2	
57	R114, 119	326A3021K0107	HV-38-100MK RK resistor	2	
58	R111, 112, 231	323A1029J0106	HMP1/4-106J RN resistor	3	
59	R8	324A3024J0272	MOS2-2.7KΩJL RS resistor	1	
60	R22, 23	324A3024J0391	MOS2-390ΩJL RS resistor	2	
61	C1, C2	302A4037M6222	DE7100F222M-VA1-KC CK capacitor 2200 PF	2	
62	C118	306A4103J2103	CQMF92PP2A103J-F0 CQ capacitor 0.010UF	1	
63	C3	306A2277M5104	MKC-S-104M CF capacitor 0.1UF	1	
64	C4	340A2014P1001	ECQ-J0187Y spark killer	1	
65	C6, 51, 35, 52, 239, 108, 237, C233, 103, 104, 110, 111, 140-142, 242	303A4019Z3104	FK16Y5V1H104Z CK capacitor	16	

OLHR-Printed Circuit Board 4YB4049-7101G2 (5/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
66	C8, 231, 235	302A4003K6331	DD05-63B331K500 500V CK capacitor 330PF	3	
67	C10, 20	304A1179J0222	ECA0JM222 6.3V CE capacitor 2200UF	2	
68	C11	302A4003K6102	DD07-63B102K500 500V CK capacitor 1000PF	1	
69	C12	302A4003K6222	DD09-63B222K500 500V CK capacitor 2200PF	1	
70	C15	304A1123C1470	SME16VB-47-OA 16V CE capacitor 47UF	1	
71	C230	304A1046E1330	25MS5-33M 25V CE capacitor 33UF	1	
72	C232, 236	304A1123J1100	SME63VB-10-OA 63V CE capacitor 10UF	2	
73	C13, 14	304A1179C1102	ECA1CM102 16V CE capacitor 1000UF	2	
74	C228, 229	303A4115M3102	CK92C1H102MS 50V CK capacitor 0.001UF	2	
75	C116	303A4019Z3473	FK16Y5V1H473Z CK capacitor	1	
76	C240, 241	302A1202K0390	DD05-63SL390J500 CC capacitor 39PF	2	
77	C101, 102, 106	302A4003K6471	DD05-63B471K500 500V CK capacitor 470PF	3	

OLHR-Printed Circuit Board 4YB4049-7101G2 (6/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
78	C105, 107, 119	302A4028K0471A	DE0705B471K1K 1KV CK capacitor 470PF	3	
79	C113, 114, 117	302A4028K2471	DE0707B471K3K 3.15KV CK capacitor 470PF	3	
80	C7	304A1005H1332	UVR1H332MHA1CA 50V CE capacitor 3300UF	1	
81	C112	302A4028K4471	DE1010B471K6K 6KV CK capacitor 470PF	1	
82	C36	303A4115M3681	CK92C1H681MS 50V CK capacitor 680PF	1	
83	Q1	601A1226M0001	2SB1258 PNP-LF-TR	1	
84	Q3, 41, 42	602A1025M0006Y	2SC1815-Y NPN-HF-TR	3	
85	Q10	602A1223M0039	2SC2752 NPN-HF-TR	1	
86	Q2, 40, 43, 44	602A1032M0004	2SC3400 NPN-HF-TR	4	
87	Q20	600A1003M0001	2SA608SP/2SA933S PNP-HF-TR	1	
88	Q21-23	600A1035M0005	DTA114S PNP-HF-TR	3	
89	D1	622A0026M0003	TM1261I-LE-LF625 gate thyristor SW	1	
90	Q15-17	602A1125M0039Y	2SC2235-Y NPN-HF-TR	3	

OLHR-Printed Circuit Board 4YB4049-7101G2 (7/9)

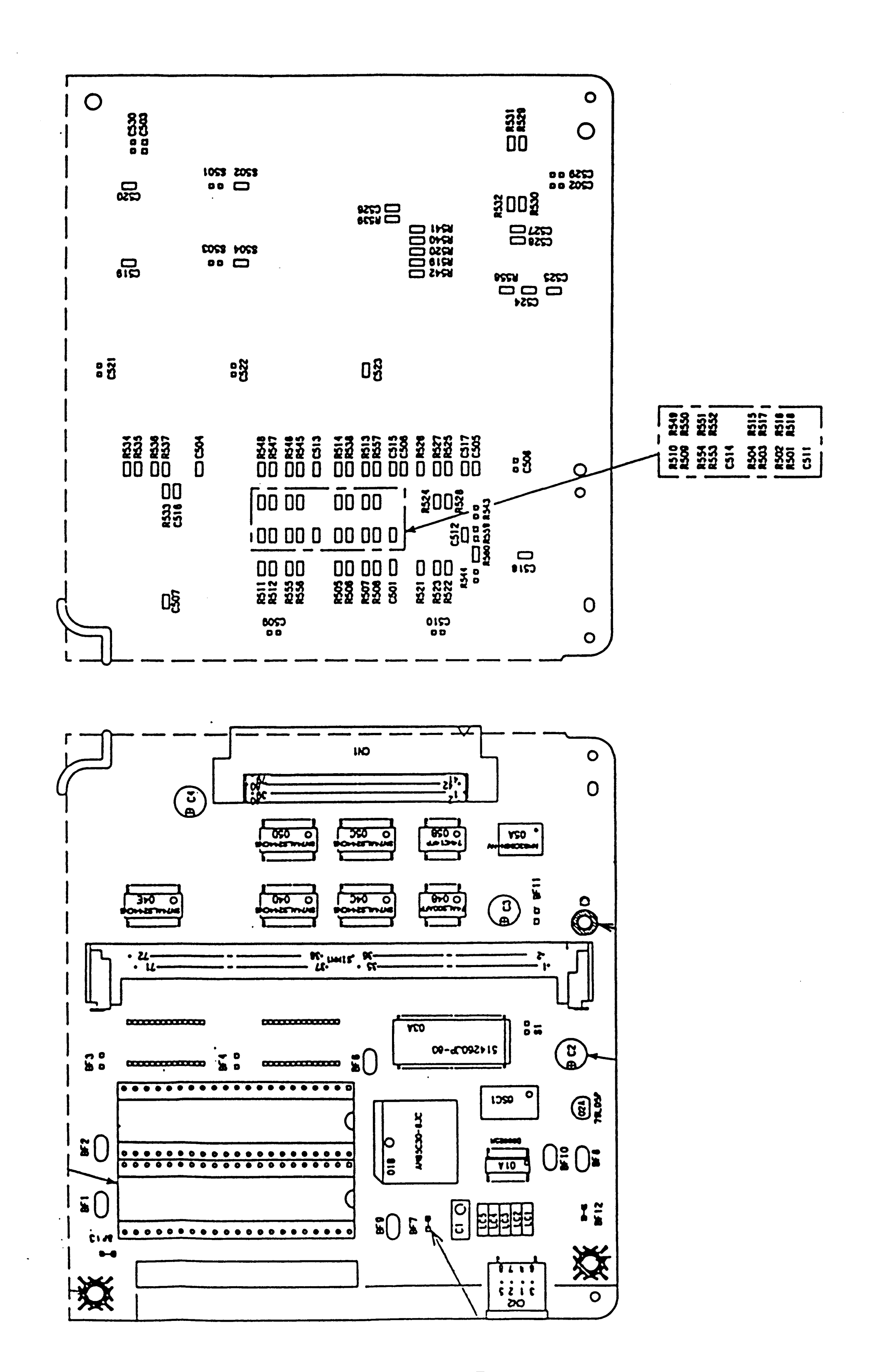
REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
91	Q11, 13	622A0022M0014	BCR1AM-12 gate thyristor SW	2	
92	Q12	620A0022M0008	CR04AM-12 gate thyristor OFF	1	
93					
94					
95	IC2	702A4731M0003	LC97000A-983 MOS digital IC	1	
96	PC1	652A0228M004	S21ME4FY photo coupler	1	
97	PS1-6	652A0114M0003	SG-206 photo coupler	6	
98	IC1	720A0843M0001	FA7617P-1 BIP linear IC	1	
99	IC4	720A0000M0002	324P BIP linear IC	1	
100	IC5	720A0000M0033	358P BIP linear IC	1	
101					
102	OSC1	381A1054B0001	CST1.80MG040 ceramic oscillator	1	
103	L2	350A0221P1001	SN8S-300/SF-T8-30S P coil	1	
104	L3	350A2510P0551	SK-21P-060-550S P coil	1	
105	L101	350A2027P0200	SU16VD-40020 power supply coil	1	
106	L1	350A0223P0402	SU10V07040/ FUS325020 power supply coil	1	
107	L10	350A2511P0102	C-14576 P coil	1	
108	T2	4YB4049-7078P001	high voltage transformer	1	

OLHR-Printed Circuit Board 4YB4049-7101G2 (8/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
109	T3	4YB4049-7078P002	high voltage transformer	1	
110	T4	4YB4049-7078P003	high voltage transformer	1	
111	CN1	224A3907P0020	5281-02A PC connector	1	
112	CN2	224A3357P0060	00-8263-0612-00-000 PC connector	1	
113	CN3	224A3222P0262	128A-026S2B-L14A PC connector	1	
114					
115	F1	540A2123T2502	19181-5A fuse	1	
116	F3	540A2221S0252	21702.5 fuse	1	
117	2	4LP-7142	FP-213 fuse holder	4	
118	4	242A7041P0001	840622-23 fuse cover	1	
119	5	4YC4061-1076P006	SUMI tube F2 (Z) (Inner 5 black)	2	L=19mm
120	3	121A1037P0001	201840-23 board in sleeve	1	
121					
122	SW1	200A3220P2000	SJ-W2P4A-03BB toggle switch	1	
123	SW2	207A1048P0001	SS-5GL13 (149) micro switch	1	
124	INLET	4YS4011-2894P002	special cord	1	
125	S28, 32, 39, 42, 51, 53, 56, 67, 72, 79, 81, 82, 86, 89, 91-93, 95, 96, 101, 105	TA-0.65	0.65 tin melted copper wire	21	L=32mm P=5.0

OLHR-Printed Circuit Board 4YB4049-7101G2 (9/9)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
126	S5, 6, 10, 14, 15, 23, 27, 29, 46, 50, 57-61, 77, 78, 80, 83, 84, 90, 97, 64, 104, 87	TA-0.65	0.65 tin melted copper wire	25	L=32mm P=10
127	S2-4, 17, 33, 35, 37, 41, 45, 62, 65, 66, 115	TA-0.65	0.65 tin melted copper wire	13	L=32mm P=15
128	S1, 11, 13, 24, 40, 52, 69, 76, 85, 98, 113, 19, R120, R232	TA-0.65	0.65 tin melted copper wire	14	L=32mm P=12.5
129	S16, 20, 22, 34, 36, 38, 43, 44, 47-49, 55, 63, 68, 70, 71, 73, 74, 75, 88, 94, 99, 102, 103, 111, 112, 114	TA-0.65	0.65 tin melted copper wire	27	L=32mm P=7.5



LQ8A-PCB 4YA4046-1672G11 Rev. 2

LQ8A- PCB 4YA4046-1672G11 Rev. 2 (1/3)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
1					
2	R509-R512, R516, R517, R519, R520, R559	323A5003J0101	RM73B2A101J RN resistor (CP)	9	
3	R521	323A5003J0121	RM73B2A121J RN resistor (CP)	1	
4	R522-R527	323A5003J0151	RM73B2A151J RN resistor (CP)	6	
5	R528	323A5003J0182	RM73B2A182J RN resistor (CP)	1	
6	R529-R532	323A5003J0220	RM73B2A220J RN resistor (CP)	4	
7	R533-R542	323A5003J0472	RM73B2A472J RN resistor (CP)	10	
8	R501-R508, R513-R515, R518, R545-R557	323A5003J0510	RM73B2A510J RN resistor (CP)	25	
9	R558	323A5003J0680	RM73B2A680J RN resistor (CP)	1	
10					
11	S502, S504	323A5003P0001	2125JPW chip jumper (CP)	2	
12					
13	C1	302A4027Z5103	TCK45F2E103ZYA 250V CK capacitor 10000PF	1	
14	C501	303A3007C0680	CC2012CH1H680J 50V CC capacitor (CP)	1	
15					

LQ8A- PCB 4YA4046-1672G11 Rev. 2 (2/3)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
16	C511-C520, C523-C528	303A6008Z2104	CK2012F1E104Z 25V CK capacitor (CP)	16	
17	C504-C507	303A6008Z1105	CK2012F1C105Z 16V CK capacitor (CP) 1UF	4	
18					
19	C2-C4	304A1046J0101	6.3MS5-100M 6.3V CE capacitor 100 UF	3	
20					
21	04B	700A2503N0000	74ALSOOAFP BIP digital IC (SO)	1	
22	05B	702A1703N0014	74HC14FP MOS digital IC (SO)	1	
23	01A	710A2053N0002	DS8925M BIP-INF-IC (SO)	1	
24	03A	8020003N2601	514260JP-70 MOS-D-RAM S	1	
25	04C, 04D, 04E, 05C, 05D	700A2550N0244B	SN74ALS244CNS BIP digital IC (SO)	5	
26	02A	720A1000M5005	79L05P BIP linear IC	1	
27	01B	855A0454N0024	AM85C30-8JC CPU-INF-IC (CC)	1	
28	05A	816A2323M0000	NM93C66N-NW MOS-EEPROM	1	
29					
30	BF1, BF2, BF6, BF8-BF10	377A1115P1309	ZBF253D-01 beads filter	6	
31	LC1-LC5	342A1012P2101	ZJSC-2R2-101 EMI filter	5	

LQ8A- PCB 4YA4046-1672G11 Rev. 2 (3/3)

REF. NO.	SYMBOL	PART NO.	TYPE/NAME	Q'TY	REMARKS
32					
33	SIMM1	245A1059P0720	3955-2TT-40721A IC socket	1	
34	2	245A1221P0420	DICF-42CS-E IC socket	2	
35	CN1	224A3515P0800	PQ80A2MA PC connector	1	
36	CN2	221A1780P0080	TCS7187-01-201 round type connector	1	
37					
38	OSC1	384A2067B0012	EXO-3-14.7456MHZ crystal oscillator	1	
39	BF7, BF12, BF13	KH-31036-25	Short Jumper (U Type) 0.65 P=2.5	3	

6. CIRCUIT DIAGRAM

Main Control Board (LQ5C-PCB) Circuit diagram (Rev. 2 or Rev. 3, Rev. 4)

Main Control Board (LQ6C-PCB) Circuit diagram (Rev. 3, Rev. 4)

Operator Panel Board (OLCC-PCB) Circuit diagram (Rev. 1)

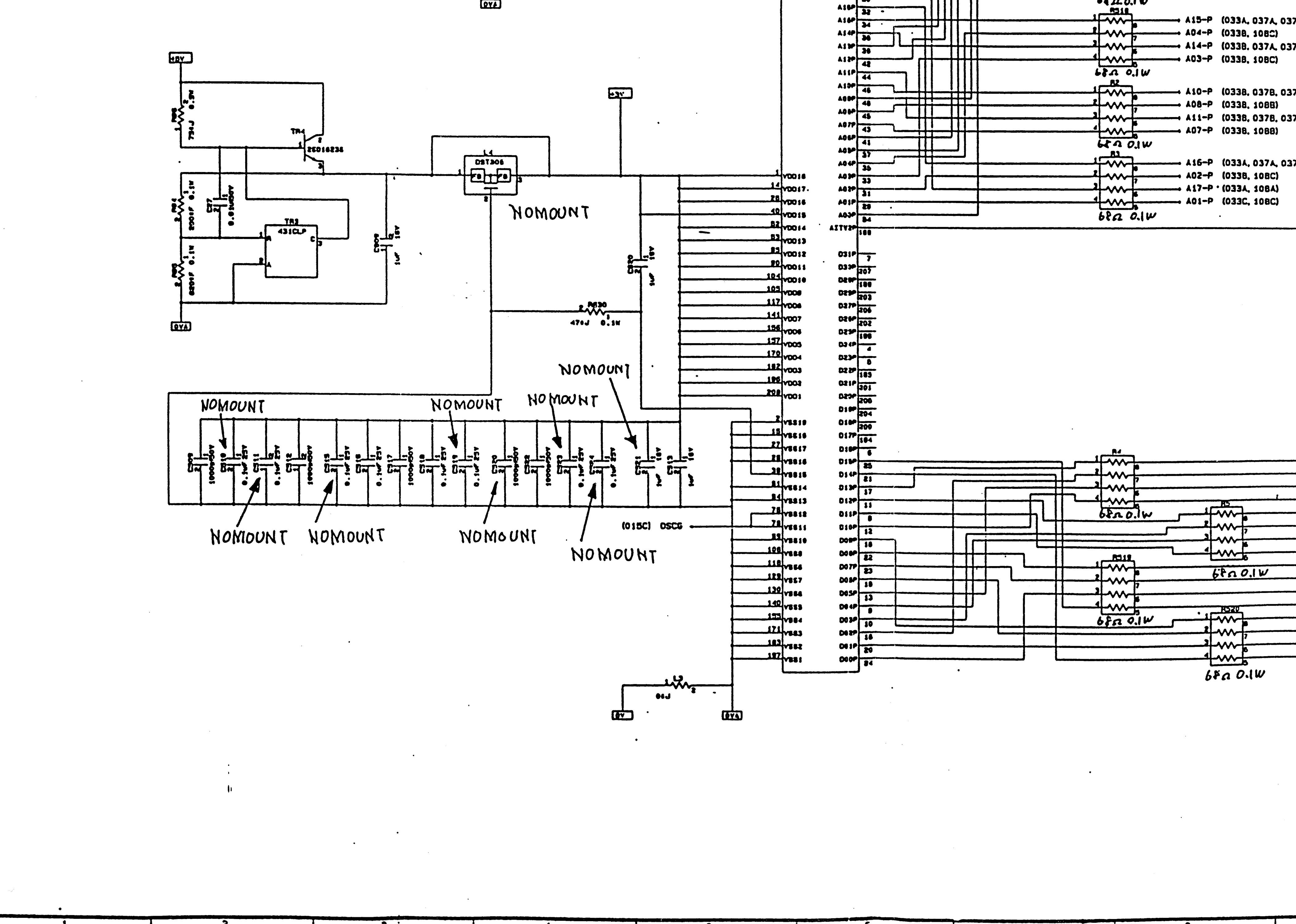
Option RAM Board (LQME-PCB) Circuit diagram (Rev. 2)

Power Supply Board (OLER-PCB) Circuit diagram

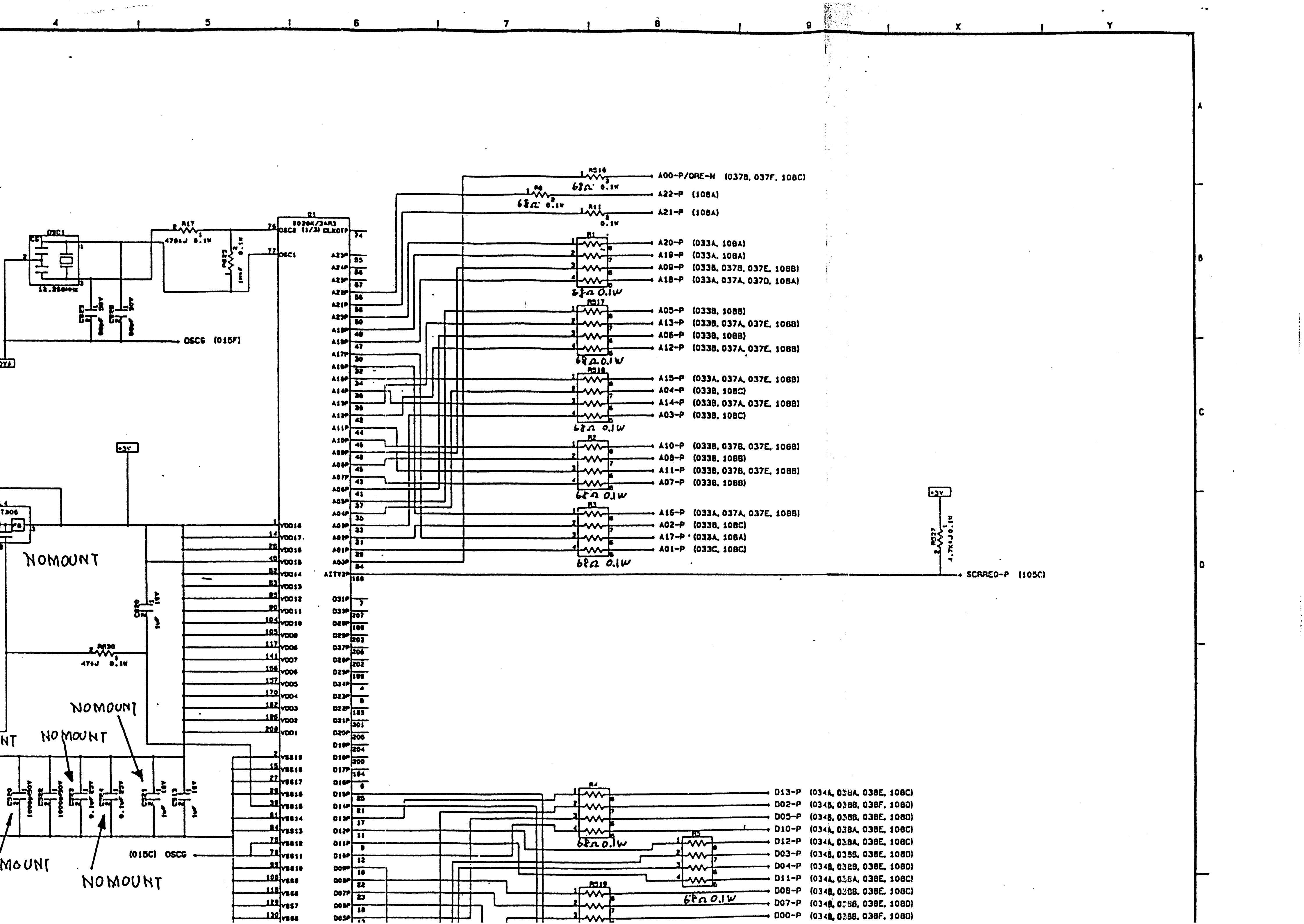
Power Supply Board (OLHR-PCB) Circuit diagram

PS Control Board (LQ8A-PCB) Circuit diagram (Rev. 2)

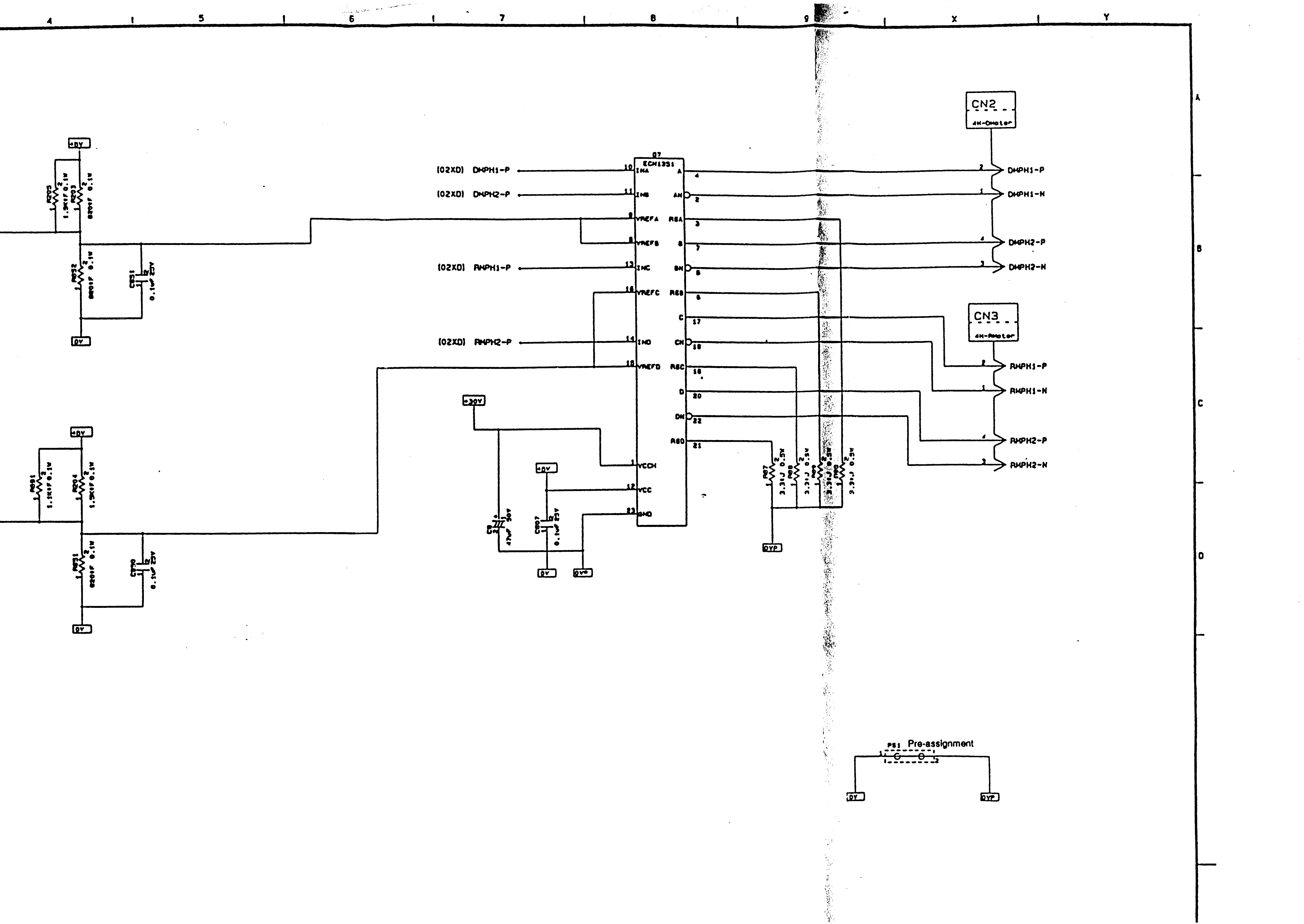
Option Tray Board (OLEV-PCB) Circuit diagram (Rev. 4)



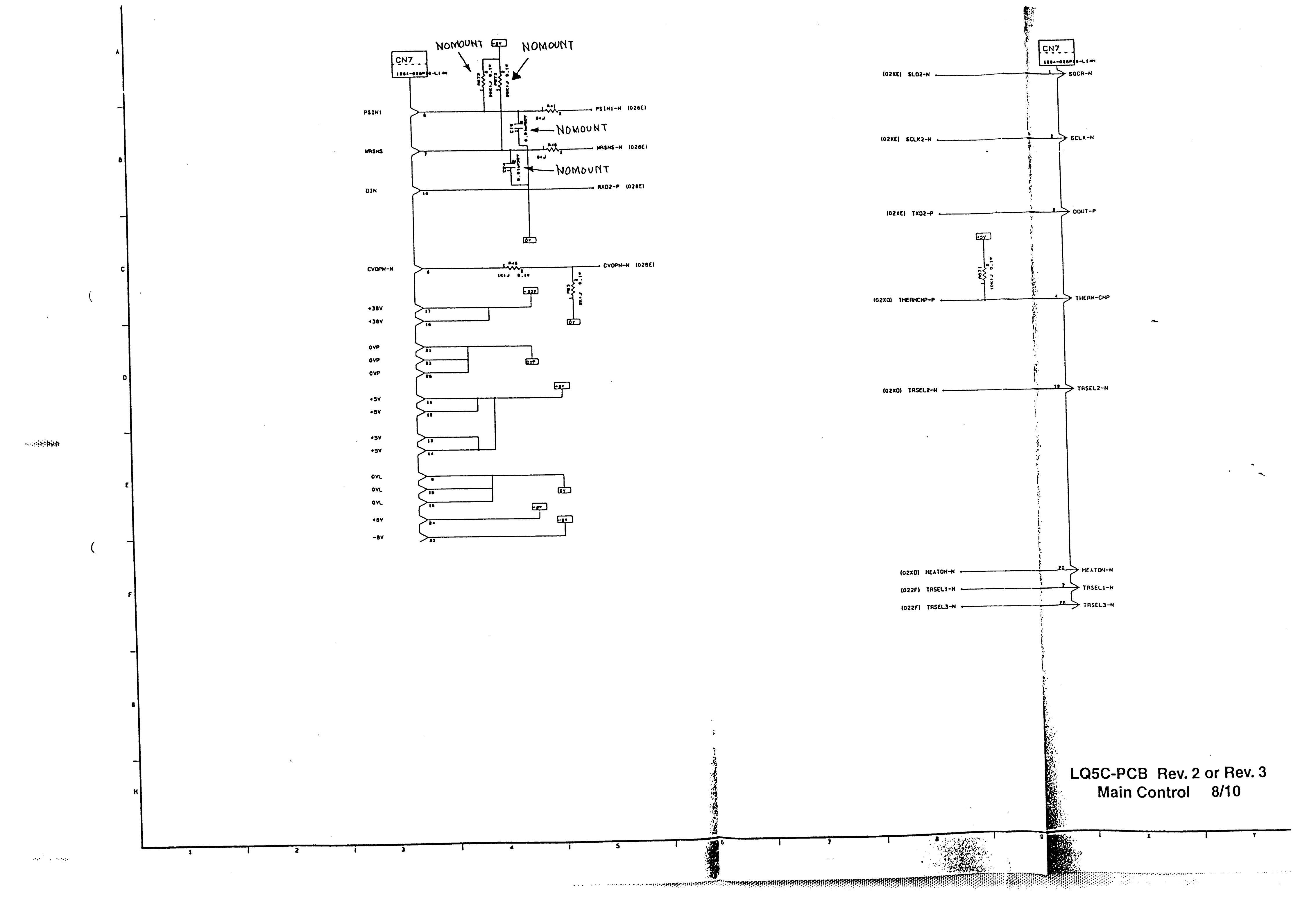
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
TR3 431CLP
TR4 2SD1623S
L4 DST306
R630 47ΩJ 0.1W
(015C) OSCG
68Ω 0.1W
A15-P (033A, 037A, 037
A04-P (033B, 108C)
A14-P (033B, 037A, 037
A03-P (033B, 108C)
A10-P (033B, 037B, 037
A08-P (033B, 108B)
A11-P (033B, 037B, 037
A07-P (033B, 108B)
A16-P (033A, 037A, 037
A02-P (033B, 108C)
A17-P (033A, 108A)
A01-P (033C, 108C)



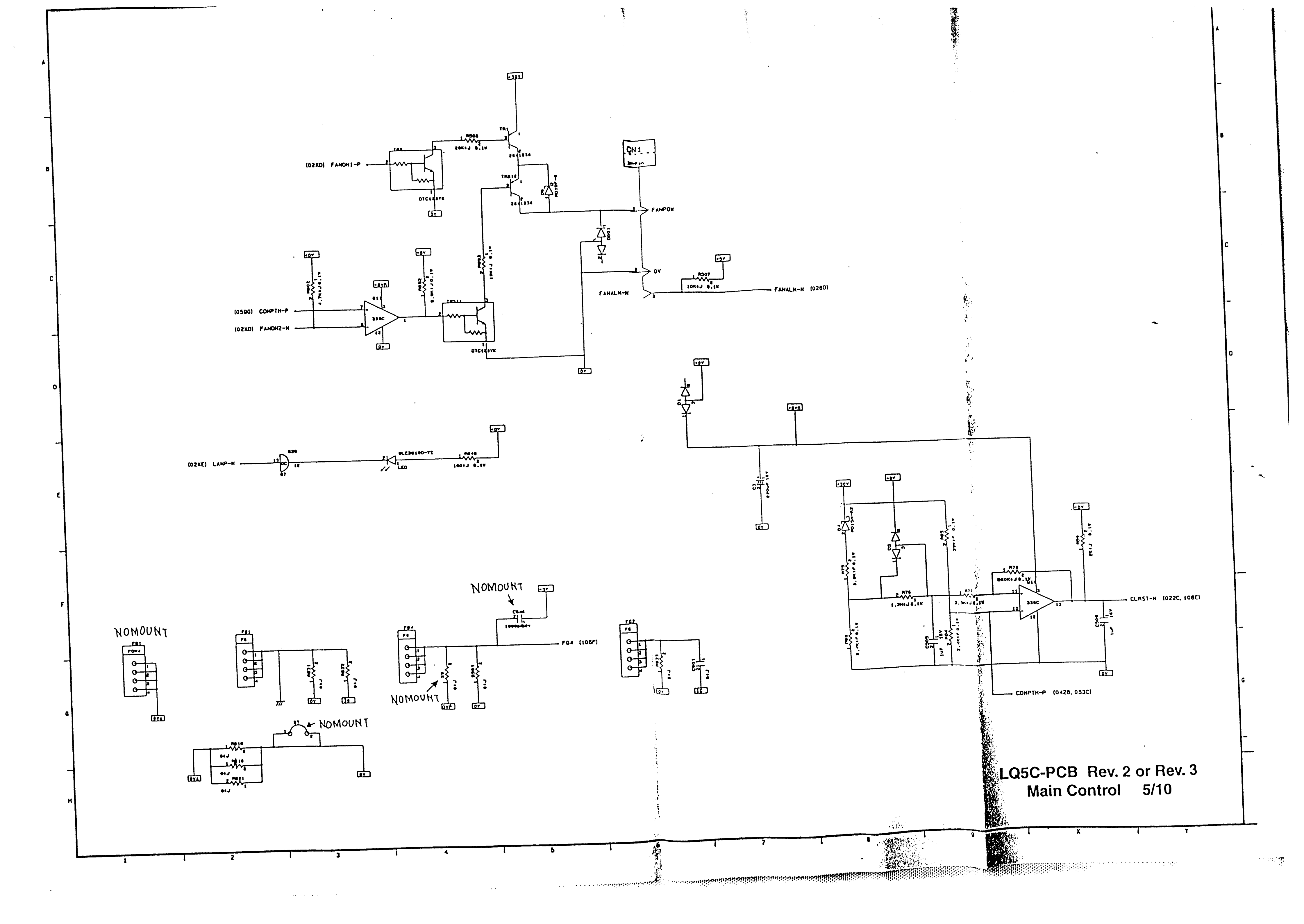
A00-P/ORE-N (037B, 037F, 108C)
A22-P (108A)
A21-P (108A)
A20-P (033A, 108A)
A19-P (033A, 108A)
A09-P (033B, 037B, 037E, 108B)
A18-P (033A, 037A, 037D, 108A)
A05-P (033B, 108B)
A13-P (033B, 037A, 037E, 108B)
A06-P (033B, 108B)
A12-P (033B, 037A, 037E, 108B)
A15-P (033A, 037A, 037E, 108B)
A04-P (033B, 108C)
A14-P (033B, 037A, 037E, 108B)
A03-P (033B, 108C)
A10-P (033B, 037B, 037E, 108B)
A08-P (033B, 108B)
A11-P (033B, 037B, 037E, 108B)
A07-P (033B, 108B)
A16-P (033A, 037A, 037E, 108B)
A02-P (033B, 108C)
A17-P (033A, 108A)
A01-P (033C, 108C)
SCRRED-P (105C)
OSC6 (015F)
(015C) OSC6
68Ω 0.1W
NOMOUNT
+3V

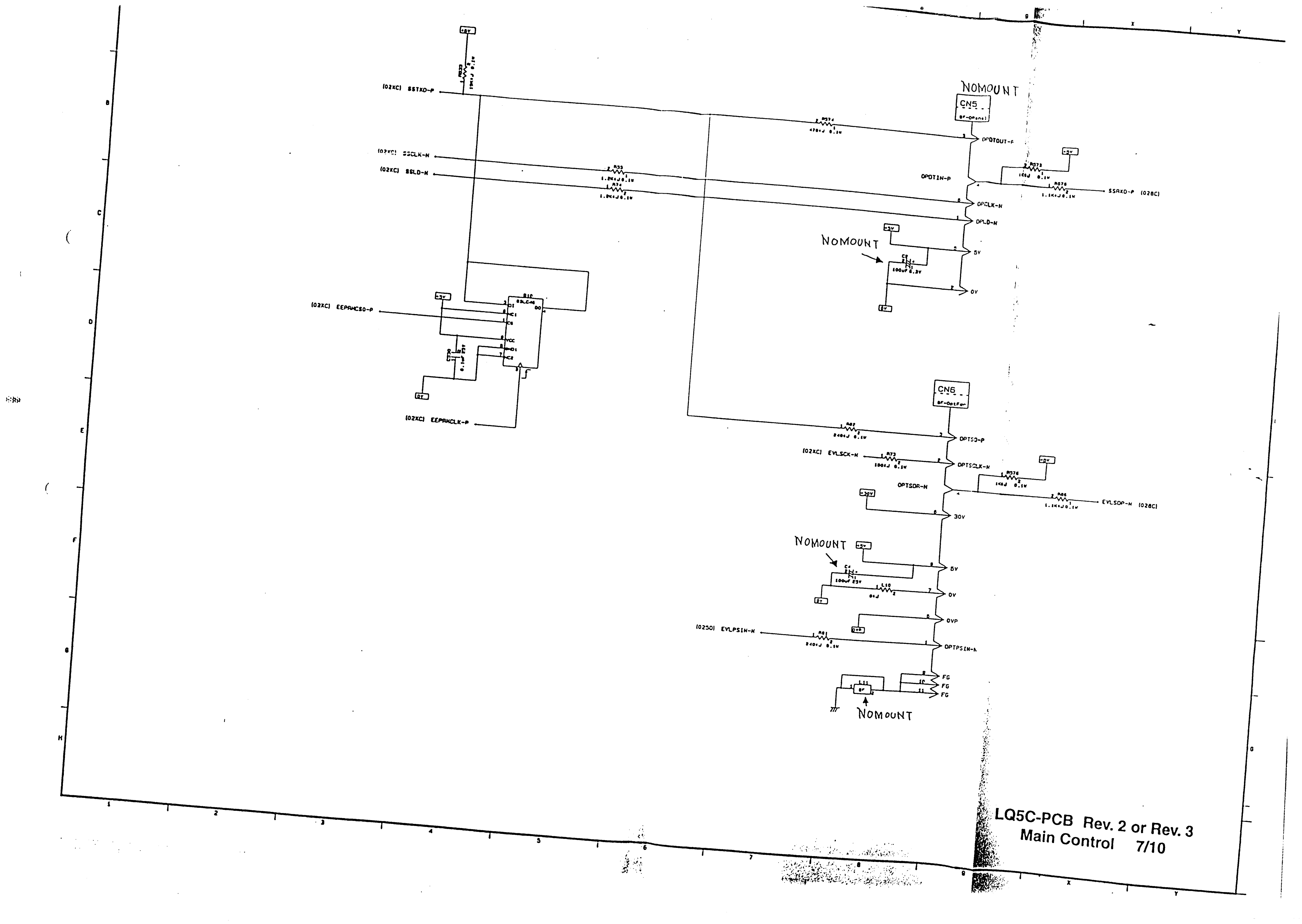


CN2
4M-DMotor
CN3
4M-RMotor
DMPH1-P
DMPH1-N
DMPH2-P
DMPH2-N
RMPH1-P
RMPH1-N
RMPH2-P
RMPH2-N
Q7
ECN1351
(02XD) DMPH1-P
(02XD) DMPH2-P
(02XD) RMPH1-P
(02XD) RMPH2-P
INA
INB
INC
IND
VREFA
VREFB
VREFC
VREFD
VCCM
VCC
GND
A
AN
RSA
B
BN
RSB
C
CN
RSC
D
DN
RSD
+30V
+5V
0V
0VP
0.1uF 25V
47uF 50V
3.3 J 0.5W
820 F 0.1W
1.5K F 0.1W
PS1 Pre-assignment

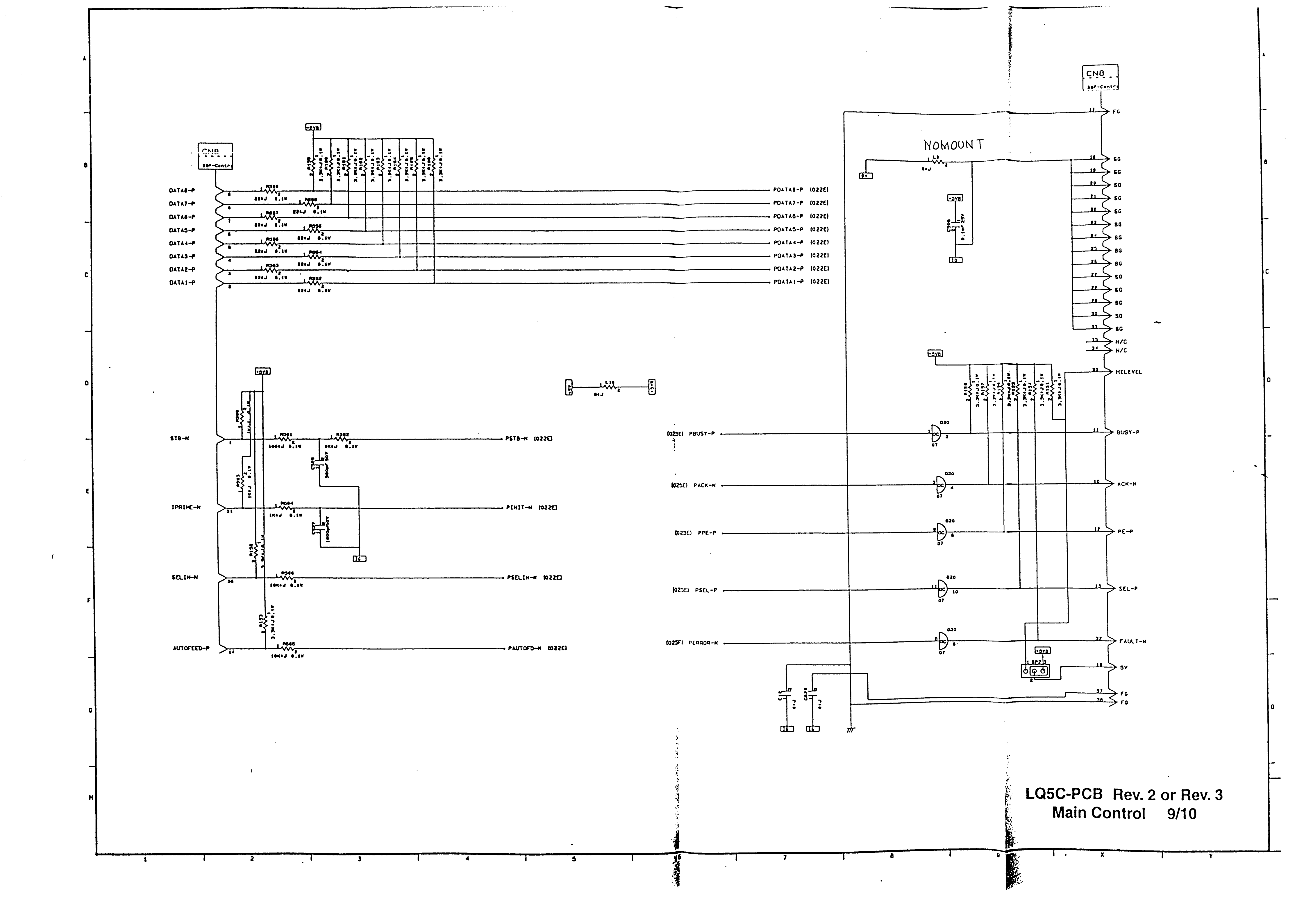


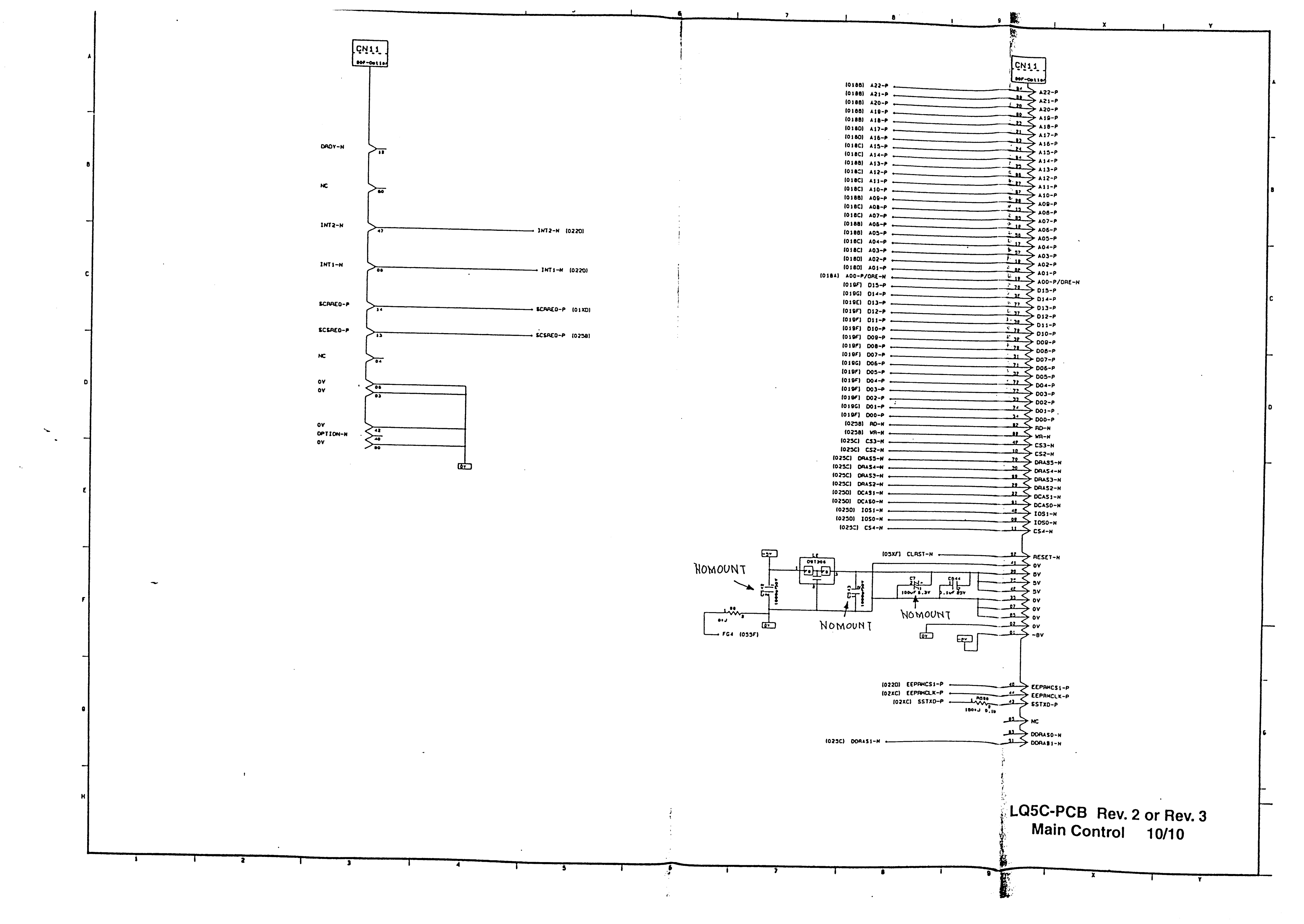
CN7
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
PSINI
WRSNS
DIN
CVOPN-N
+38V
+38V
0VP
0VP
0VP
+5V
+5V
+5V
+5V
0VL
0VL
0VL
+8V
-8V
PSINI-N (02BE)
WRSNS-N (02BE)
RXD2-P (02BE)
CVOPN-N (02BE)
(02XE) SLO2-N
(02XE) SCLK2-N
(02XE) TXD2-P
(02XO) THERMCHP-P
(02XO) TRSEL2-N
(02XO) HEATON-N
(022F) TRSEL1-N
(022F) TRSEL3-N
SOCR-N
SCLK-N
DOUT-P
THERM-CHP
TRSEL2-N
HEATON-N
TRSEL1-N
TRSEL3-N
LQ5C-PCB Rev. 2 or Rev. 3
Main Control 8/10


LQ5C-PCB Rev. 2 or Rev. 3
Main Control 5/10
(02XD) FANON1-P
(05QG) COMPTH-P
(02XD) FANON2-N
(02XE) LAMP-N
CN1
FANPOW
0V
FANALM-N
FANALM-N (02B0)
CLRST-N (022C, 10BE)
COMPTH-P (042B, 053C)
FG4 (105F)
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT

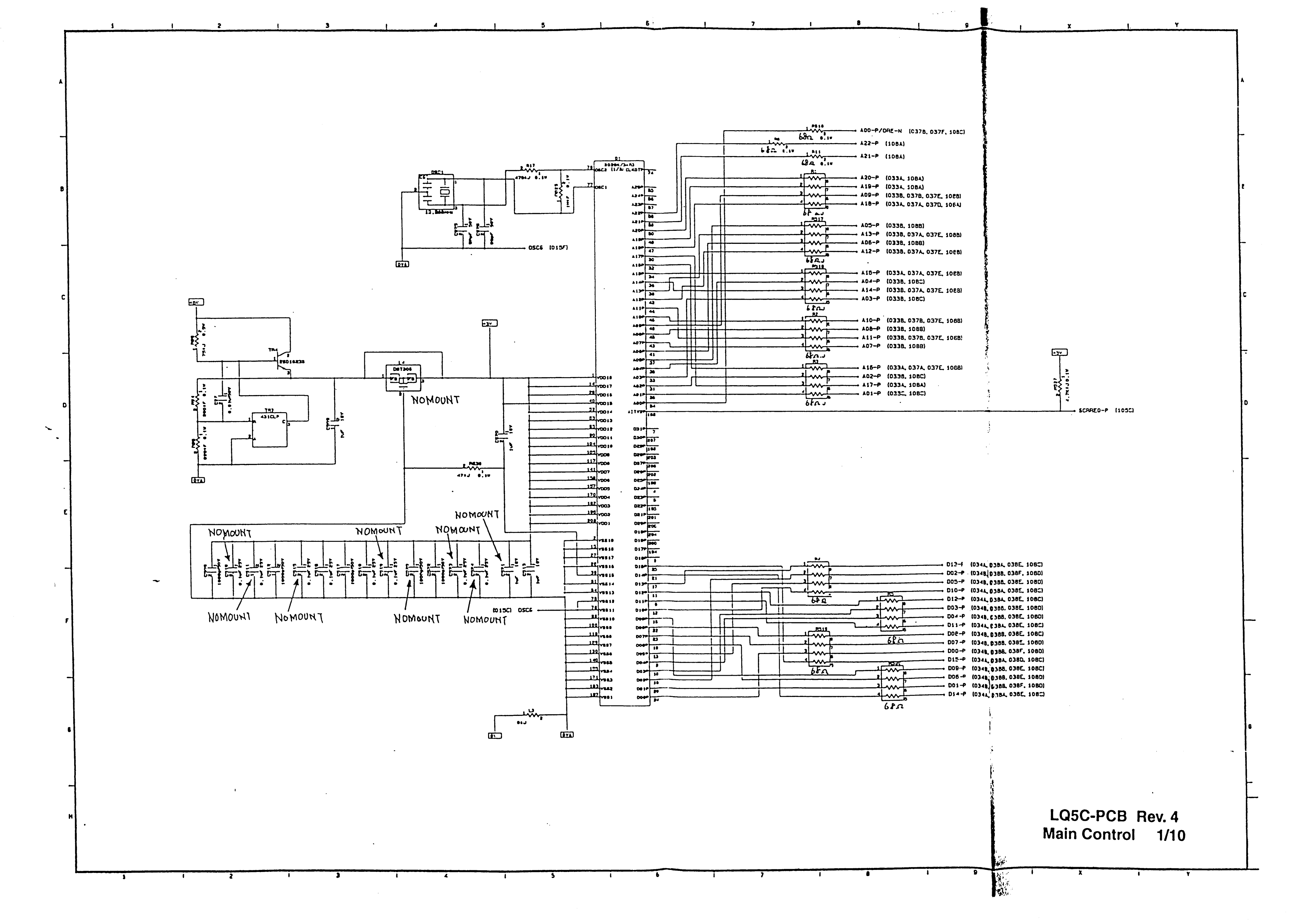


(02XC) SSTXD-P
(02XC) SSCLK-N
(02XC) SSLD-N
(02XC) EEPROMCSO-P
(02XC) EEPROMCLK-P
NOMOUNT
CN5
OPDTOUT-P
OPDTIN-P
SSRXD-P (02BC)
OPCLK-N
OPLD-N
5V
0V
NOMOUNT
CN6
OPTSD-P
(02XC) EVLSCK-N
OPTSCLK-N
OPTSDR-N
EVLSOP-N (02BC)
30V
NOMOUNT
5V
0V
0VP
(02SO) EVLPSIN-N
OPTPSIN-N
FG
FG
FG
NOMOUNT
LQ5C-PCB Rev. 2 or Rev. 3
Main Control 7/10

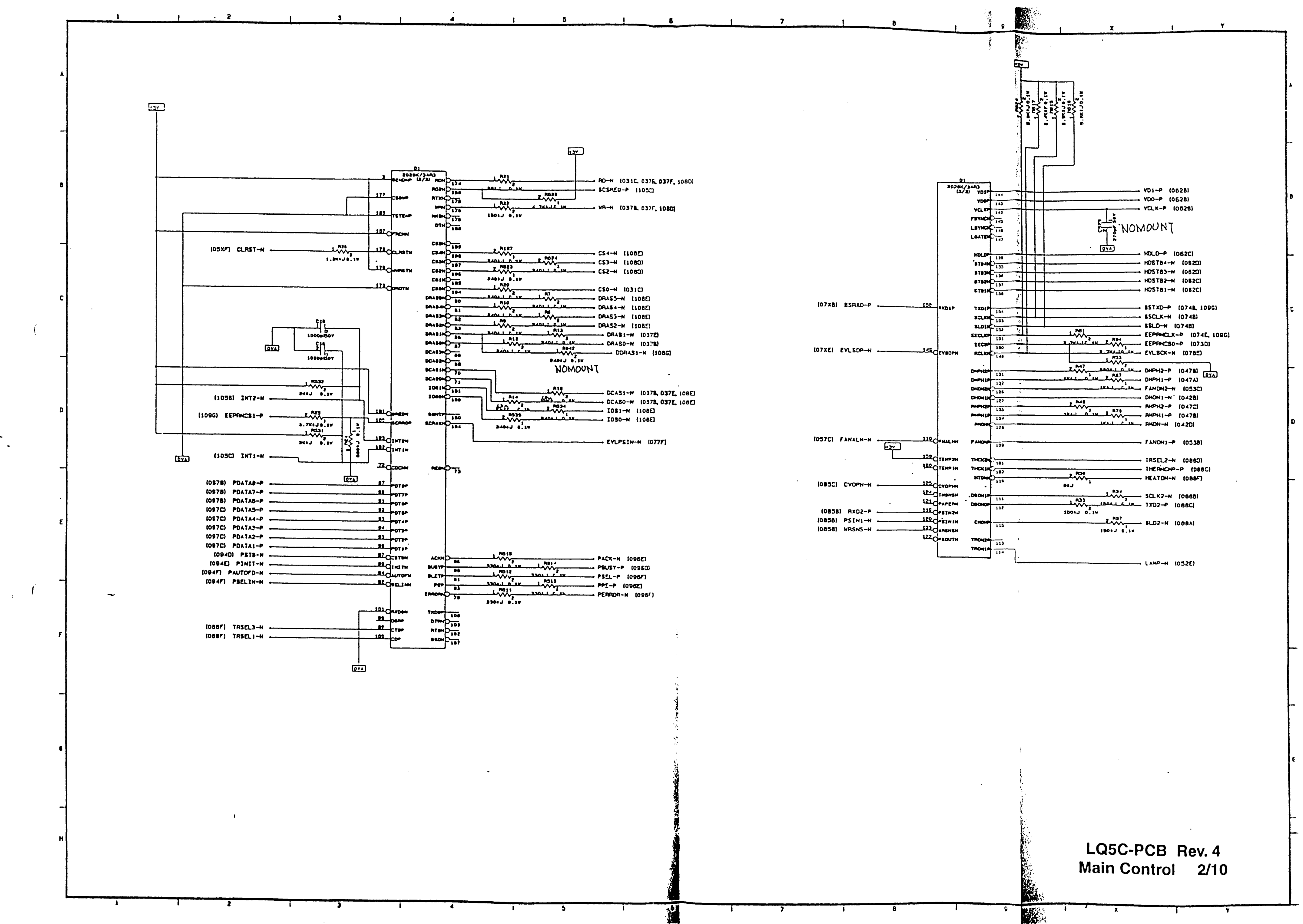

CN8
36P-Centro
DATA8-P
DATA7-P
DATA6-P
DATA5-P
DATA4-P
DATA3-P
DATA2-P
DATA1-P
PDATA8-P (022E)
PDATA7-P (022E)
PDATA6-P (022E)
PDATA5-P (022E)
PDATA4-P (022E)
PDATA3-P (022E)
PDATA2-P (022E)
PDATA1-P (022E)
STB-N
IPRIME-N
SELIN-N
AUTOFEED-P
PSTB-N (022E)
PINIT-N (022E)
PSELIN-N (022E)
PAUTOFD-N (022E)
(025E) PBUSY-P
(025E) PACK-N
(025E) PPE-P
(025E) PSEL-P
(025F) PERROR-N
NOMOUNT
FG
SG
N/C
HILEVEL
BUSY-P
ACK-N
PE-P
SEL-P
FAULT-N
5V
LQ5C-PCB Rev. 2 or Rev. 3
Main Control 9/10



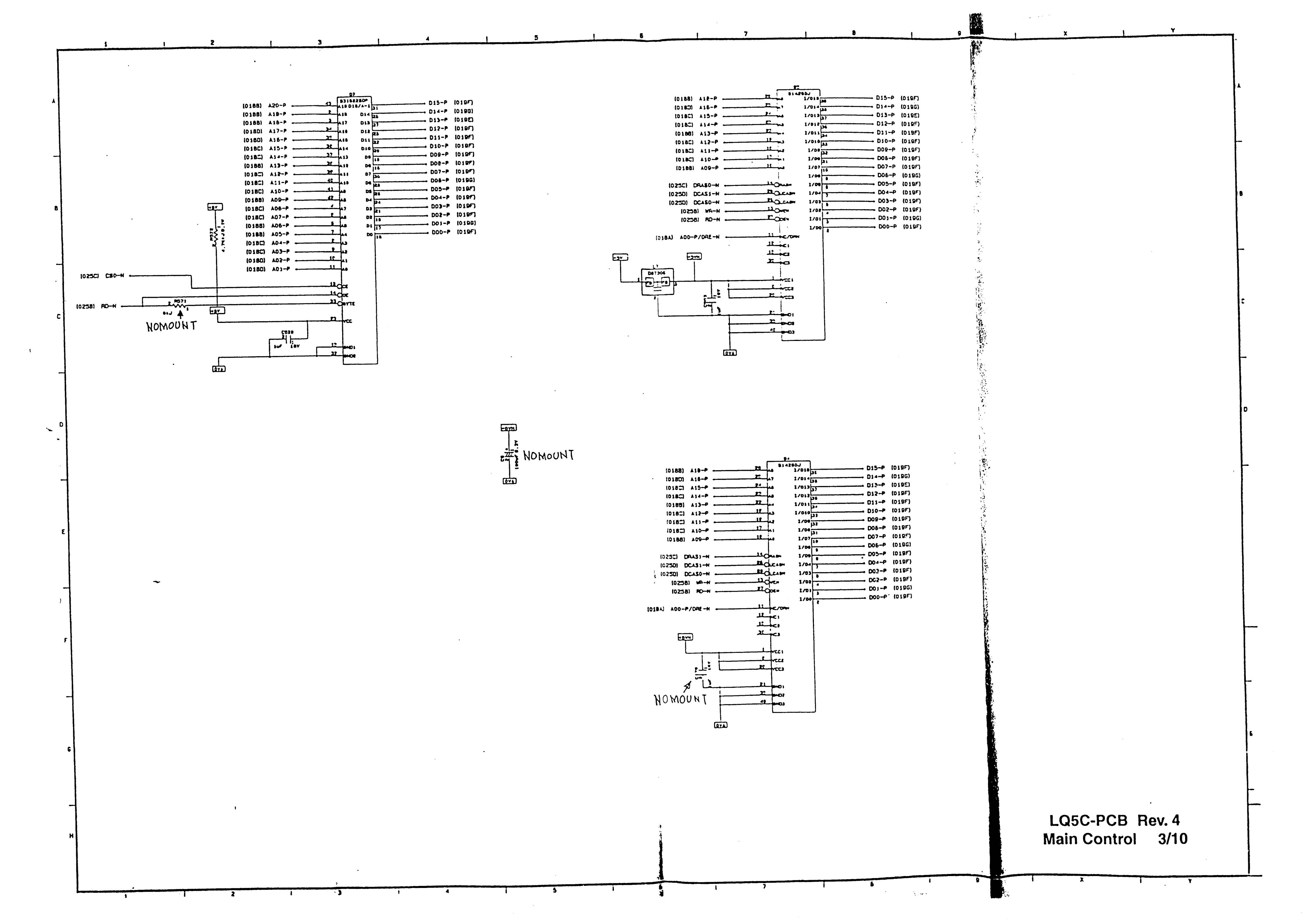
CN11
DRDY-N
NC
INT2-N
INT1-N
SCRREQ-P
SCSREQ-P
NC
0V
0V
0V
OPTION-N
0V
INT2-N (022D)
INT1-N (022D)
SCRREQ-P (01XD)
SCSREQ-P (025B)
CN11
A22-P
A21-P
A20-P
A19-P
A18-P
A17-P
A16-P
A15-P
A14-P
A13-P
A12-P
A11-P
A10-P
A09-P
A08-P
A07-P
A06-P
A05-P
A04-P
A03-P
A02-P
A01-P
A00-P/ORE-N
D15-P
D14-P
D13-P
D12-P
D11-P
D10-P
D09-P
D08-P
D07-P
D06-P
D05-P
D04-P
D03-P
D02-P
D01-P
D00-P
RD-N
WR-N
CS3-N
CS2-N
DRAS5-N
DRAS4-N
DRAS3-N
DRAS2-N
DCAS1-N
DCAS0-N
IOS1-N
IOS0-N
CS4-N
RESET-N
0V
5V
5V
5V
0V
0V
0V
0V
-8V
(05XF) CLRST-N
NOMOUNT
NOMOUNT
NOMOUNT
FG4 (055F)
EEPRMCS1-P
EEPRMCLK-P
SSTXD-P
NC
DORAS0-N
DORAS1-N
(022D) EEPRMCS1-P
(02XC) EEPRMCLK-P
(02XC) SSTXD-P
(025C) DORAS1-N
LQ5C-PCB Rev. 2 or Rev. 3
Main Control 10/10

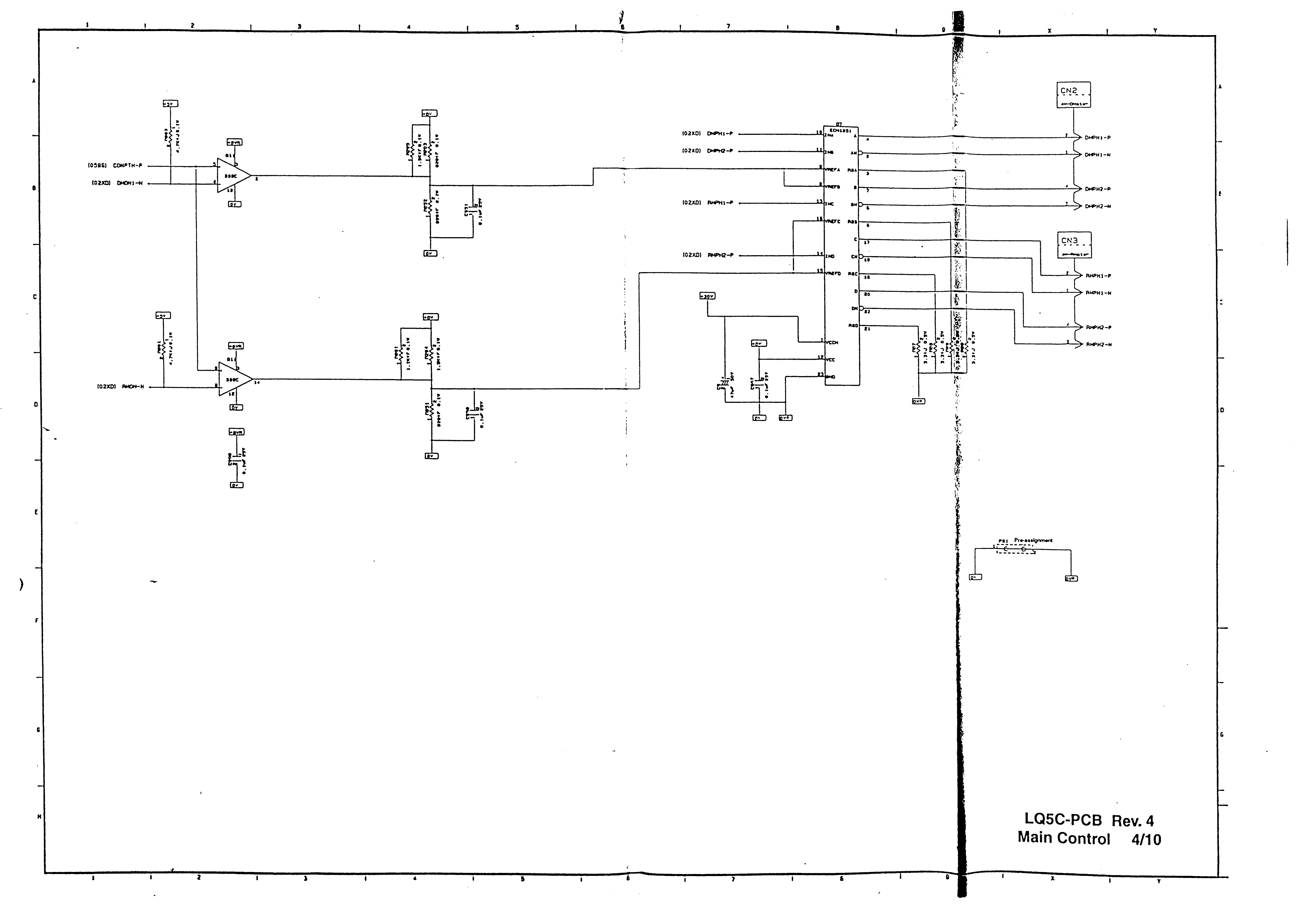


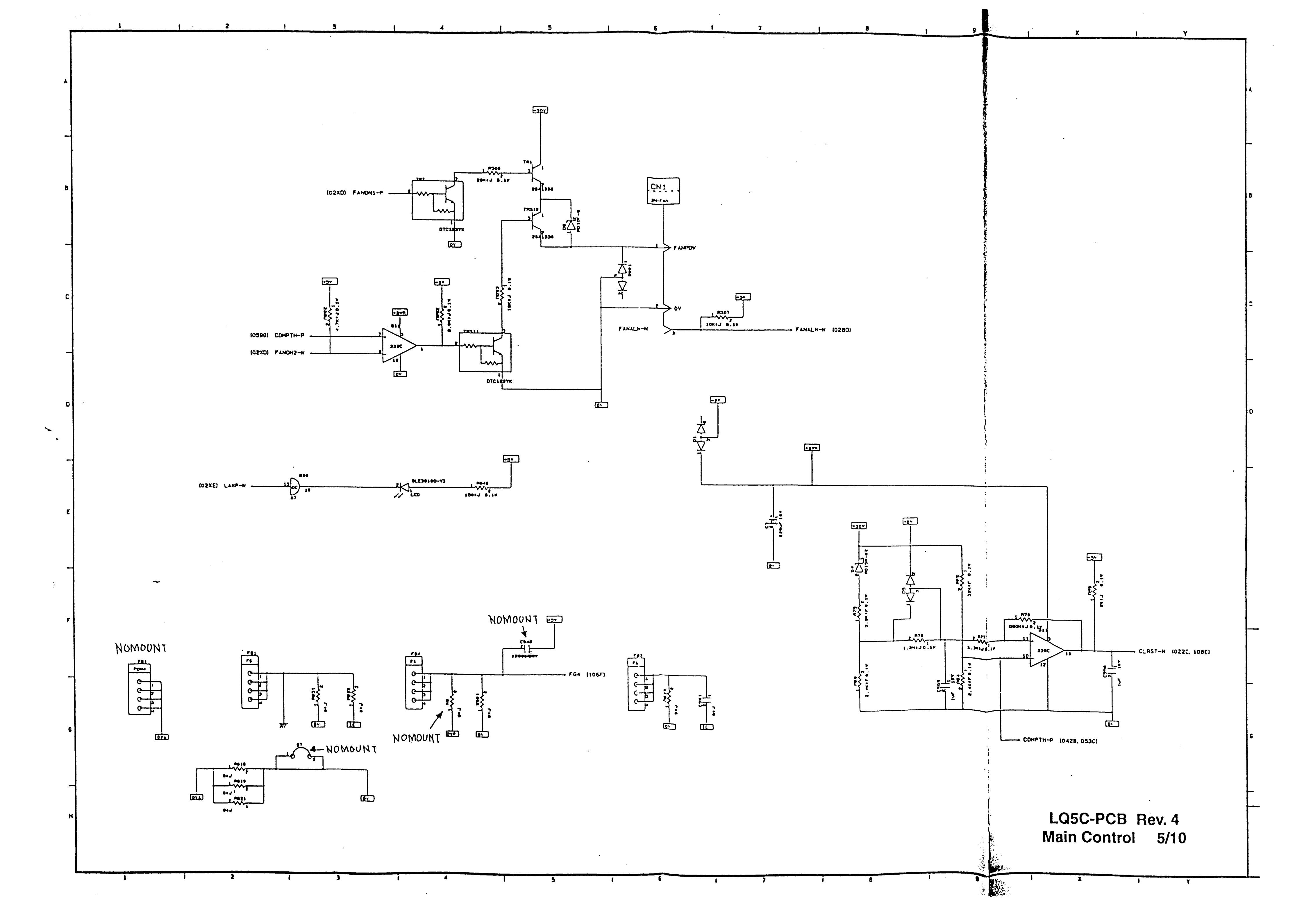
LQ5C-PCB Rev. 4
Main Control 1/10
A00-P/ORE-N (C37B, 037F, 108C)
A22-P (108A)
A21-P (108A)
A20-P (033A, 108A)
A19-P (033A, 108A)
A09-P (033B, 037B, 037E, 108B)
A18-P (033A, 037A, 037D, 108A)
A05-P (033B, 108B)
A13-P (033B, 037A, 037E, 108B)
A06-P (033B, 108B)
A12-P (033B, 037A, 037E, 108B)
A15-P (033A, 037A, 037E, 108B)
A04-P (033B, 108C)
A14-P (033B, 037A, 037E, 108B)
A03-P (033B, 108C)
A10-P (033B, 037B, 037E, 108B)
A08-P (033B, 108B)
A11-P (033B, 037B, 037E, 108B)
A07-P (033B, 108B)
A16-P (033A, 037A, 037E, 108B)
A02-P (033B, 108C)
A17-P (033A, 108A)
A01-P (033C, 108C)
SCRREO-P (105C)
OSC6 (015F)
(015C) OSC6
NOMOUNT



NOMOUNT
NOMOUNT
LQ5C-PCB Rev. 4
Main Control 2/10


NOMOUNT
NOMOUNT
NOMOUNT
LQ5C-PCB Rev. 4
Main Control 3/10


(05B6) CONPTH-P
(02XD) DMON1-N
(02XD) RMON-N
(02XD) DMPH1-P
(02XD) DMPH2-P
(02XD) RMPH1-P
(02XD) RMPH2-P
CN2
CN3
DMPH1-P
DMPH1-N
DMPH2-P
DMPH2-N
RMPH1-P
RMPH1-N
RMPH2-P
RMPH2-N
PS1 Pre-assignment
LQ5C-PCB Rev. 4
Main Control 4/10



(02XD) FANON1-P
(0599) COMPTH-P
(02XD) FANON2-N
FANPOW
FANALM-N
FANALM-N (028D)
CN1
DTC123YK
2SA1336
339C
(02XE) LAMP-N
CLRST-N (022C, 108E)
COMPTH-P (042B, 053C)
FG4 (106F)
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
LQ5C-PCB Rev. 4
Main Control 5/10

NOMOUNT

NOMOUNT

NOMOUNT

CN4

(02XB) VD0-P — R31 100ΩJ 0.1W — L15 DST306 — R71 100ΩJ 0.1W — HDOT0-P

(02XB) VD1-P — R32 100ΩJ 0.1W — DST306 — HDOT1-P

R377

(02XB) VCLK-P — R70 56ΩJ 0.1W — L14 DST306 — R72 56ΩJ 0.1W — HDCLK-P

(02XB) HOLD-P — R813 100ΩJ 0.1W — HOLD-P

(02XC) HOSTB1-N — R812 560ΩJ 0.1W — STB1-N

(02XC) HOSTB2-N — R811 560ΩJ 0.1W — STB2-N

(02XC) HOSTB3-N — R810 560ΩJ 0.1W — STB3-N

(02XC) HOSTB4-N — R809 560ΩJ 0.1W — STB4-N

5V

5V

DV

DV

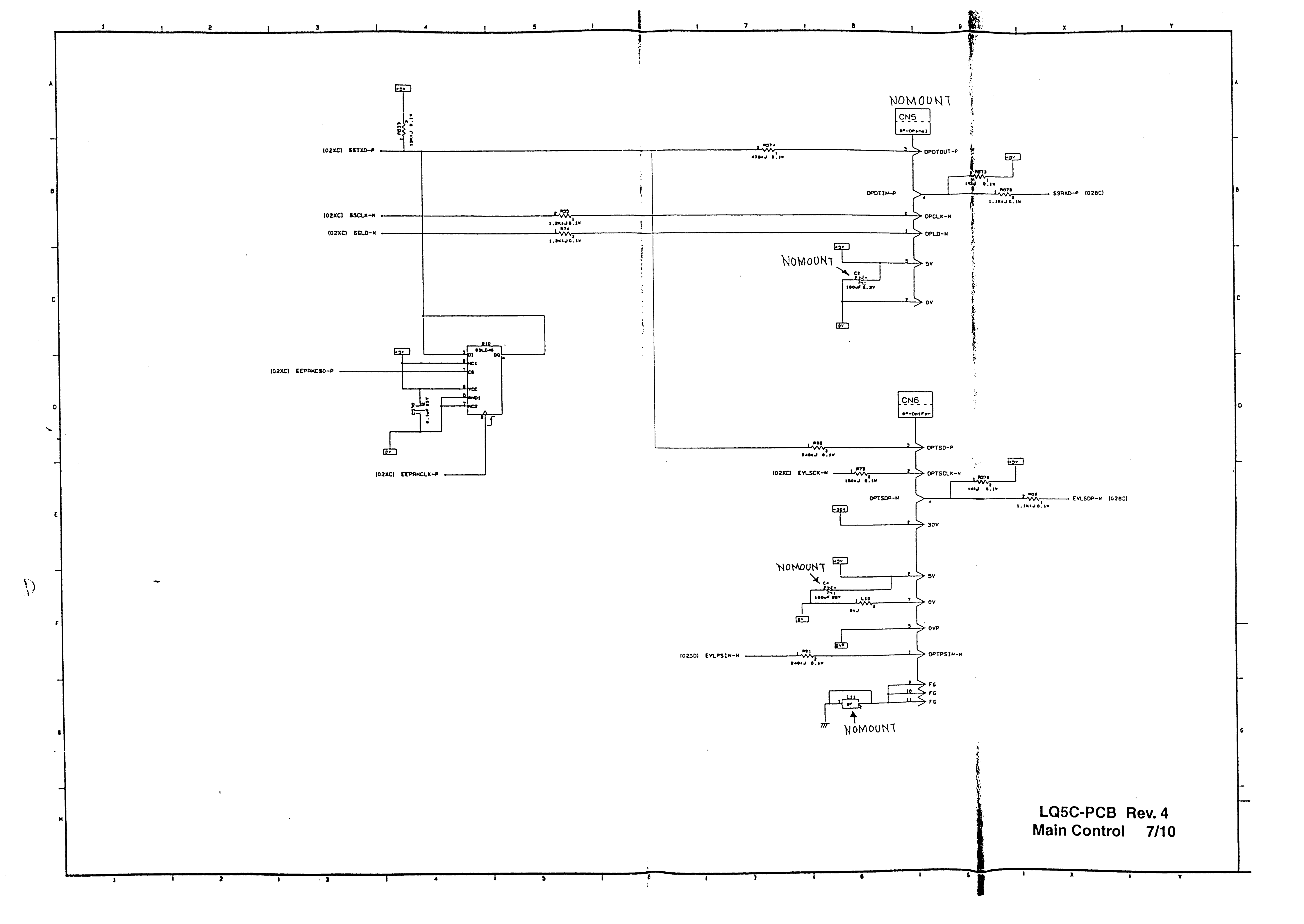
DV

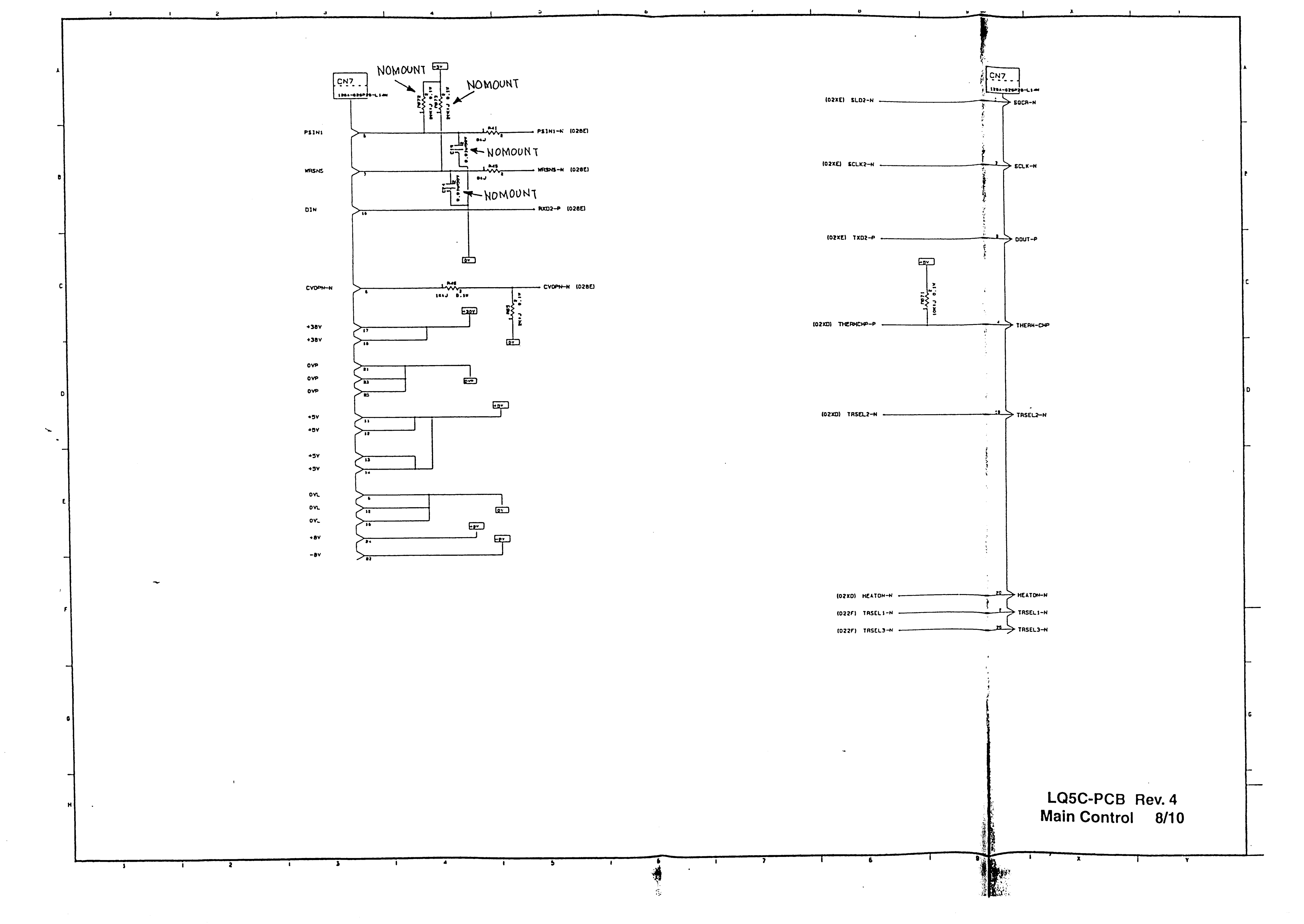
FG

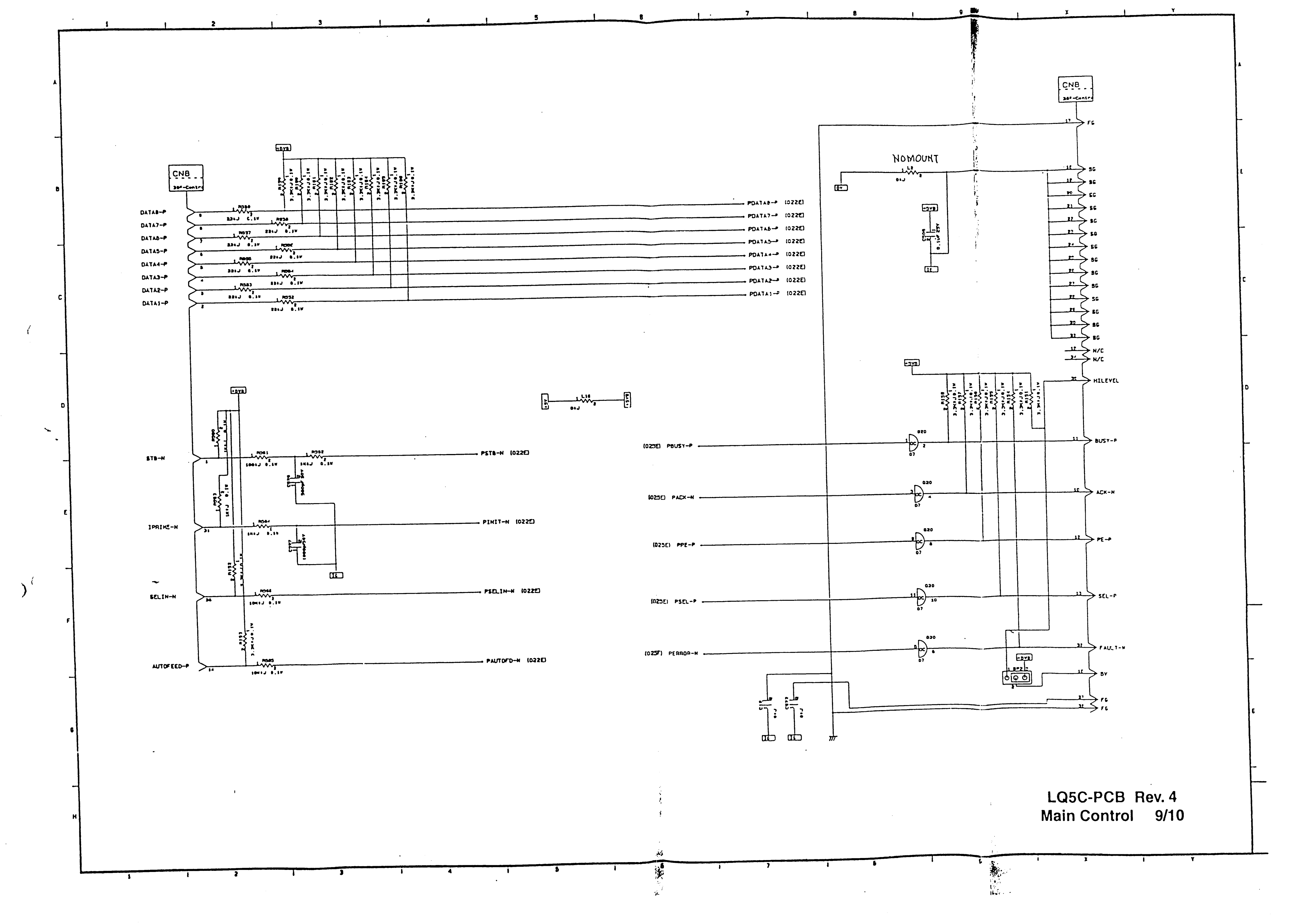
L9

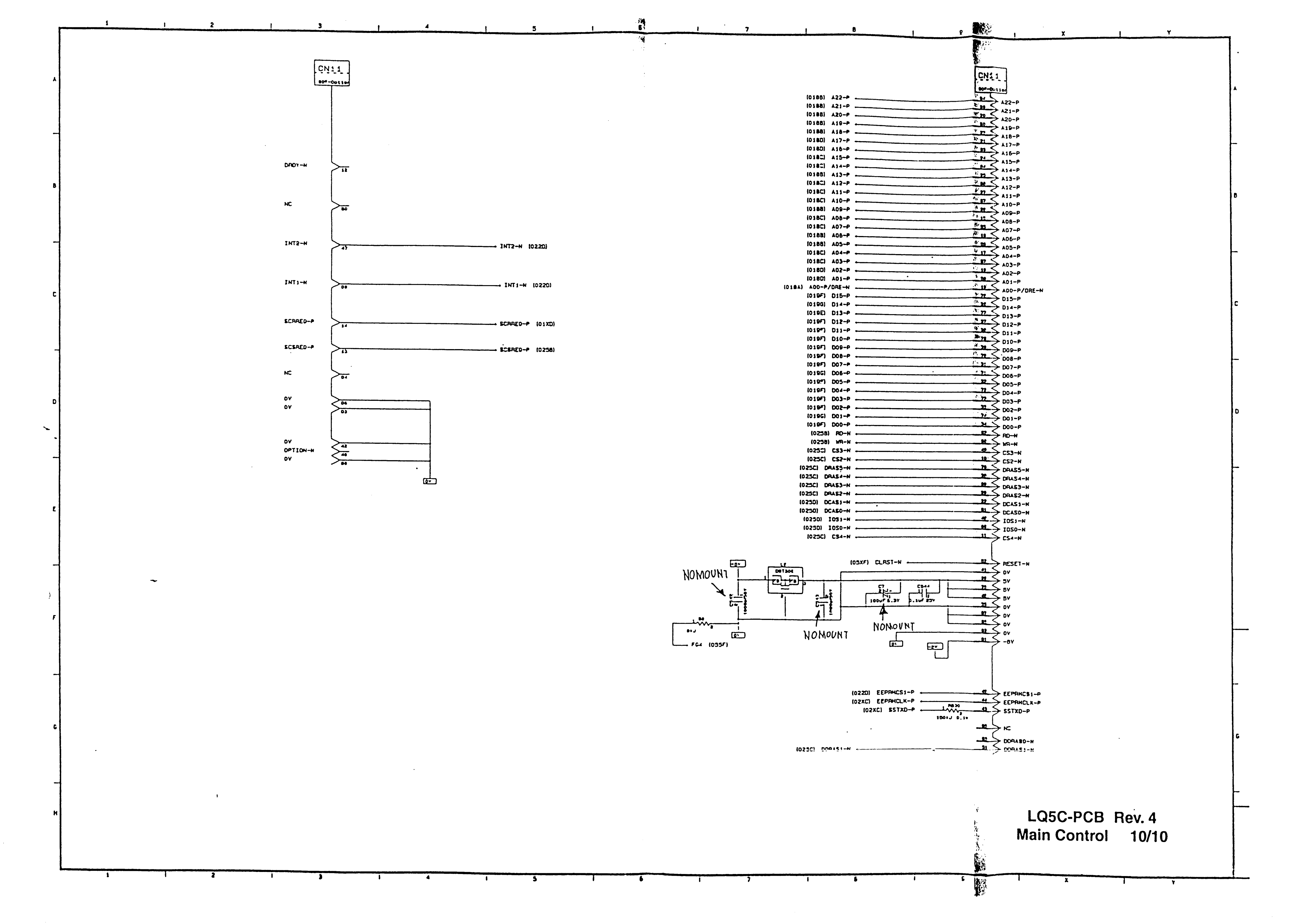
L10

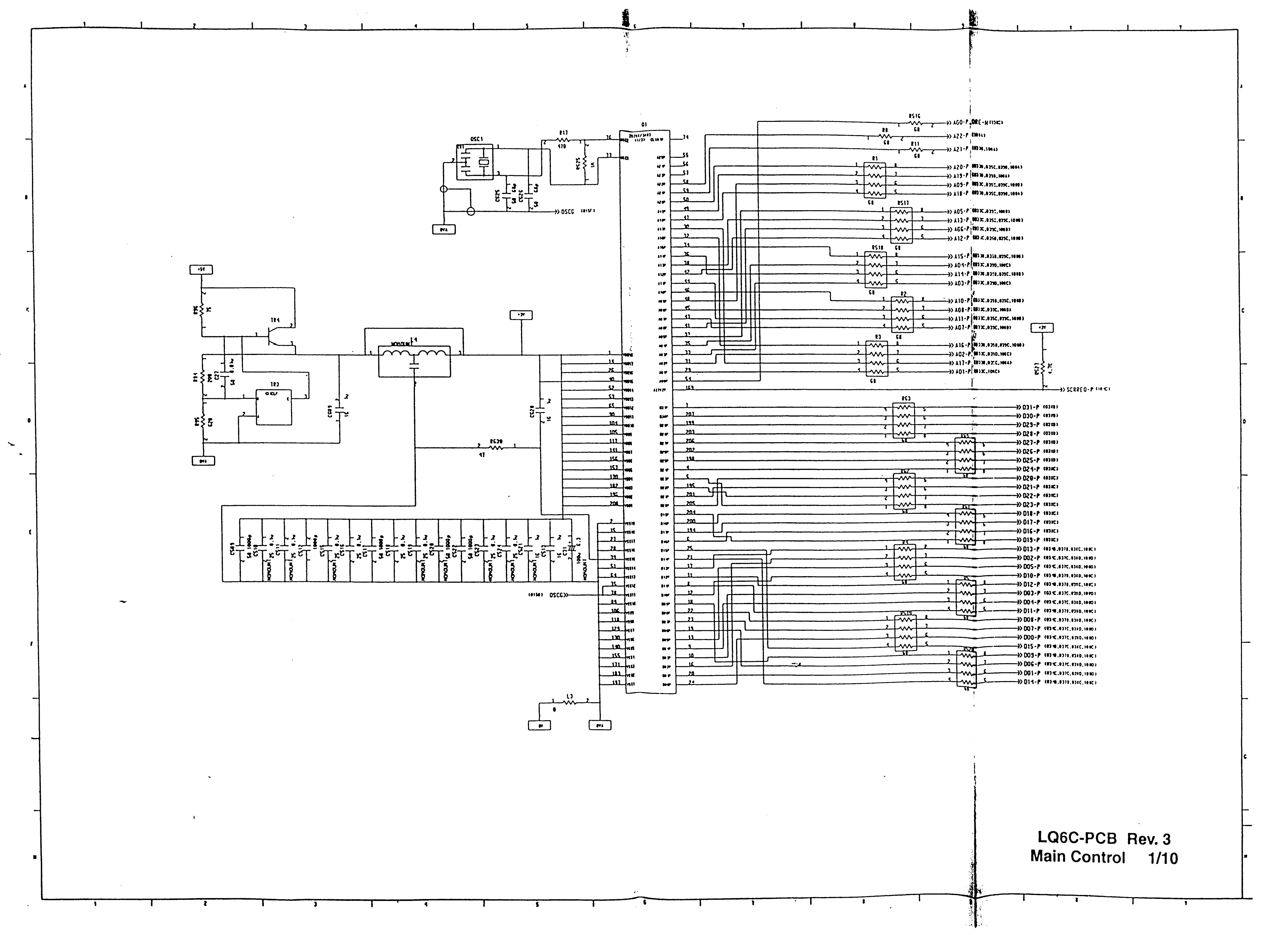
LQ5C-PCB Rev. 4
Main Control 6/10

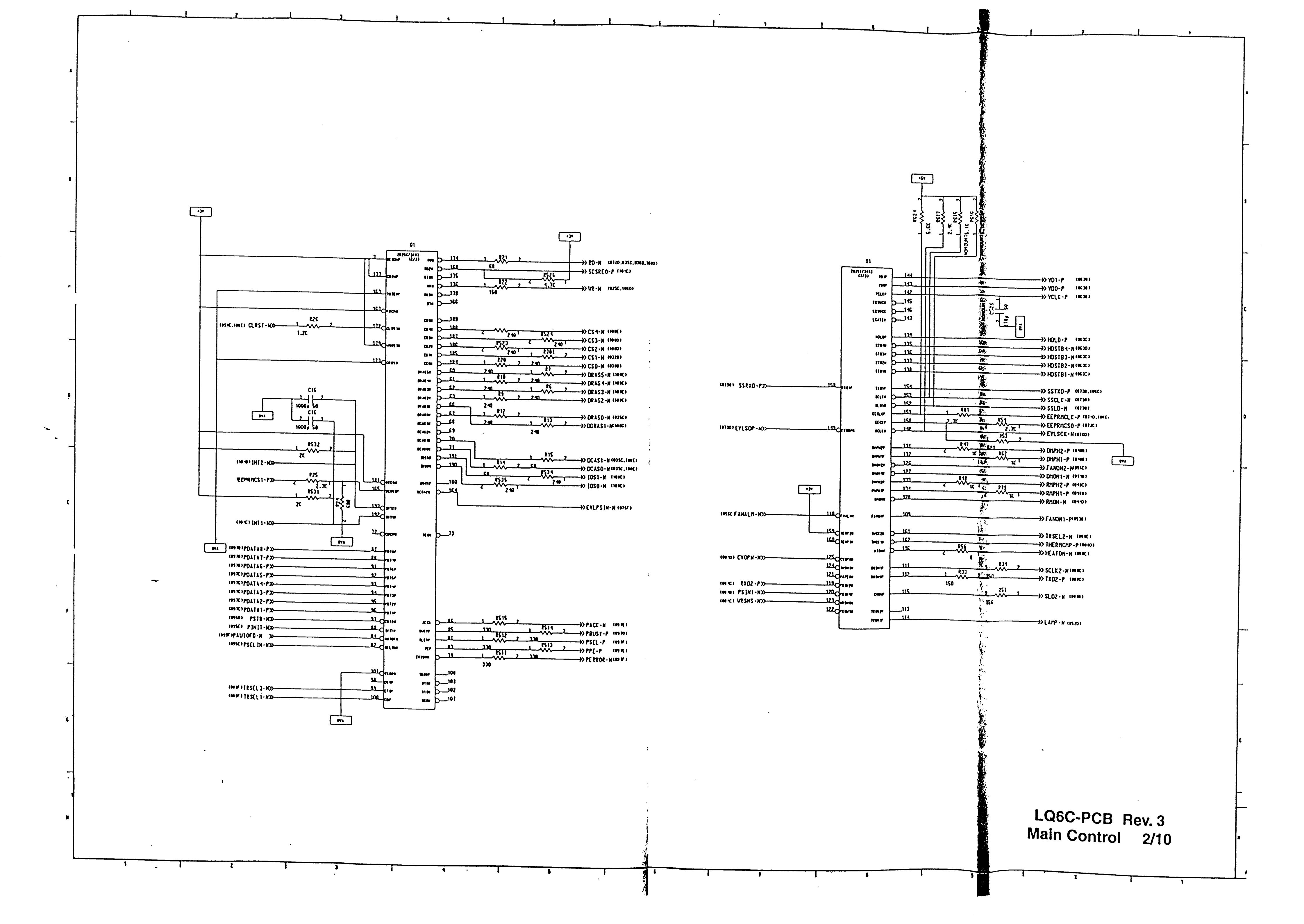

NOMOUNT
CN5
(02XC) SSTXD-P
OPDTOUT-P
OPDTIN-P
SSRXD-P (02BC)
(02XC) SSCLK-N
OPCLK-N
(02XC) SSLD-N
OPLD-N
5V
0V
(02XC) EEPRWCSO-P
(02XC) EEPRWCLK-P
CN6
OPTSD-P
(02XC) EVLSCK-N
OPTSCLK-N
OPTSDA-N
EVLSDP-N (02BC)
30V
OVP
(025D) EVLPSIN-N
OPTPSIN-N
FG
LQ5C-PCB Rev. 4
Main Control 7/10

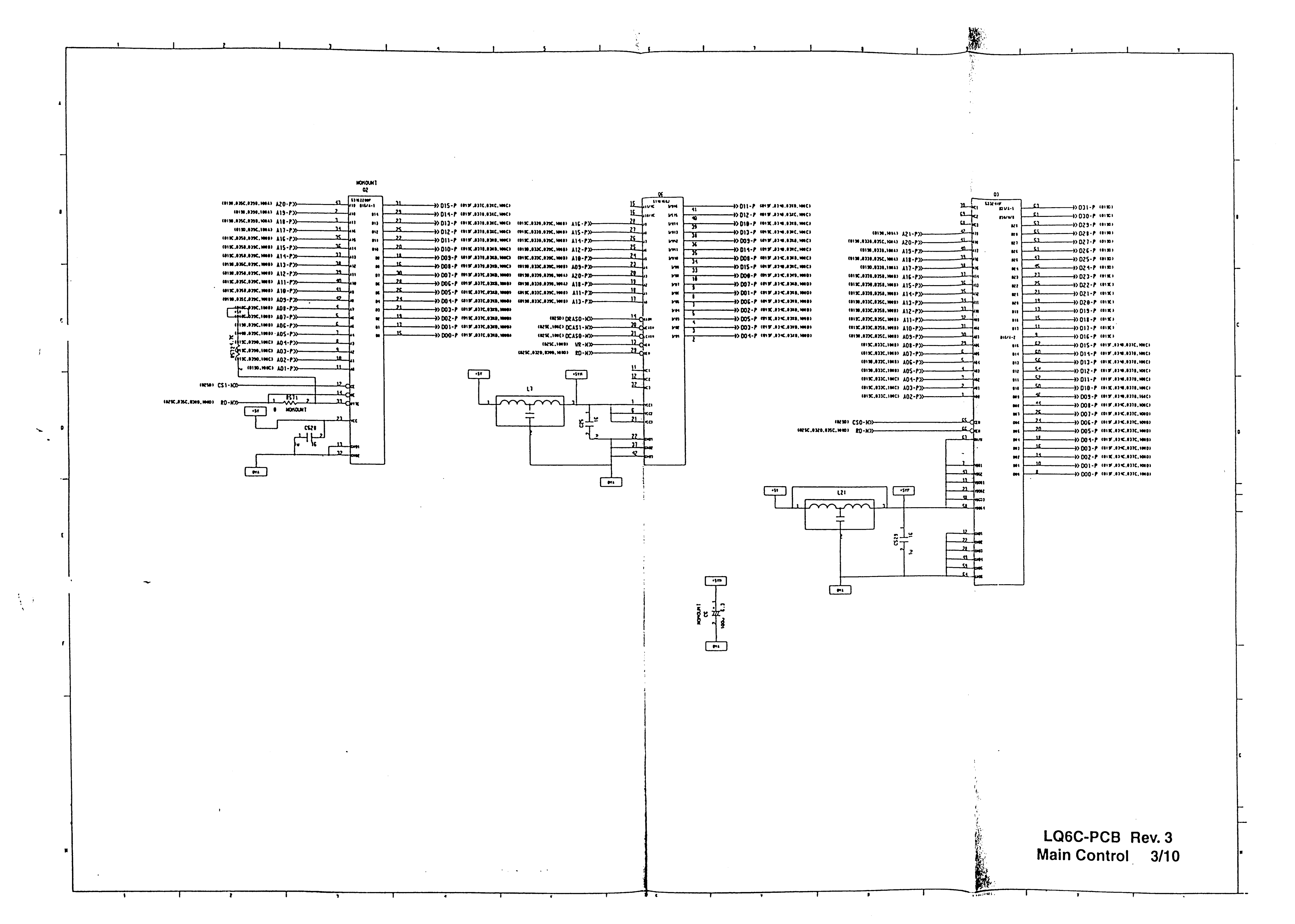

CN7
NOMOUNT
NOMOUNT
NOMOUNT
NOMOUNT
PSIN1
PSIN1-N (028E)
WRSNS
WRSNS-N (028E)
DIN
RXD2-P (028E)
CVOPN-N
CVOPN-N (028E)
+38V
+38V
OVP
OVP
OVP
+5V
+5V
+5V
+5V
OVL
OVL
OVL
+8V
-8V
(02XE) SLD2-N
SOCR-N
(02XE) SCLK2-N
SCLK-N
(02XE) TXD2-P
DOUT-P
(02XD) THERMCHP-P
THERM-CHP
(02XD) TRSEL2-N
TRSEL2-N
(02XD) HEATON-N
HEATON-N
(022F) TRSEL1-N
TRSEL1-N
(022F) TRSEL3-N
TRSEL3-N
LQ5C-PCB Rev. 4
Main Control 8/10

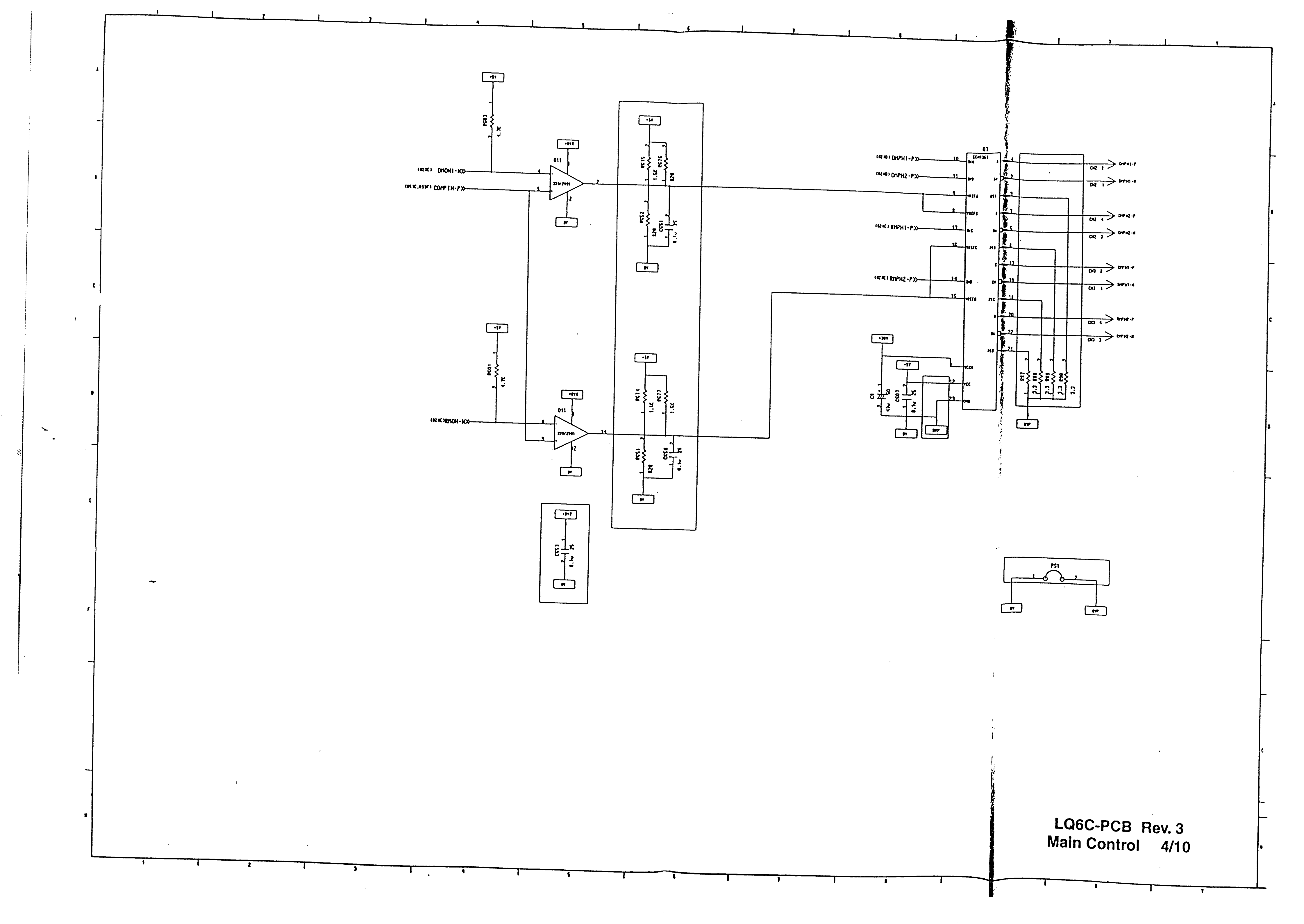

CN8
DATA8-P
DATA7-P
DATA6-P
DATA5-P
DATA4-P
DATA3-P
DATA2-P
DATA1-P
PDATA8-P (022E)
PDATA7-P (022E)
PDATA6-P (022E)
PDATA5-P (022E)
PDATA4-P (022E)
PDATA3-P (022E)
PDATA2-P (022E)
PDATA1-P (022E)
STB-N
IPRIME-N
SELIN-N
AUTOFEED-P
PSTB-N (022E)
PINIT-N (022E)
PSELIN-N (022E)
PAUTOFD-N (022E)
NOMOUNT
FG
SG
N/C
HILEVEL
BUSY-P
ACK-N
PE-P
SEL-P
FAULT-N
5V
(025E) PBUSY-P
(025E) PACK-N
(025E) PPE-P
(025E) PSEL-P
(025F) PERROR-N
LQ5C-PCB Rev. 4
Main Control 9/10


CN11
CN11
DRDY-N
NC
INT2-N
INT1-N
SCRRED-P
SCSRED-P
NC
OPTION-N
INT2-N (0220)
INT1-N (0220)
SCRRED-P (01XD)
SCSRED-P (0258)
A00-P/DRE-N
RD-N
WR-N
CS3-N
CS2-N
DRAS5-N
DRAS4-N
DRAS3-N
DRAS2-N
DCAS1-N
DCAS0-N
IOS1-N
IOS0-N
CS4-N
RESET-N
(05XF) CLRST-N
NOMOUNT
NOMOUNT
NOMOUNT
EEPRMCS1-P
EEPRMCLK-P
SSTXD-P
DDRAS0-N
DDRAS1-N
LQ5C-PCB Rev. 4
Main Control 10/10

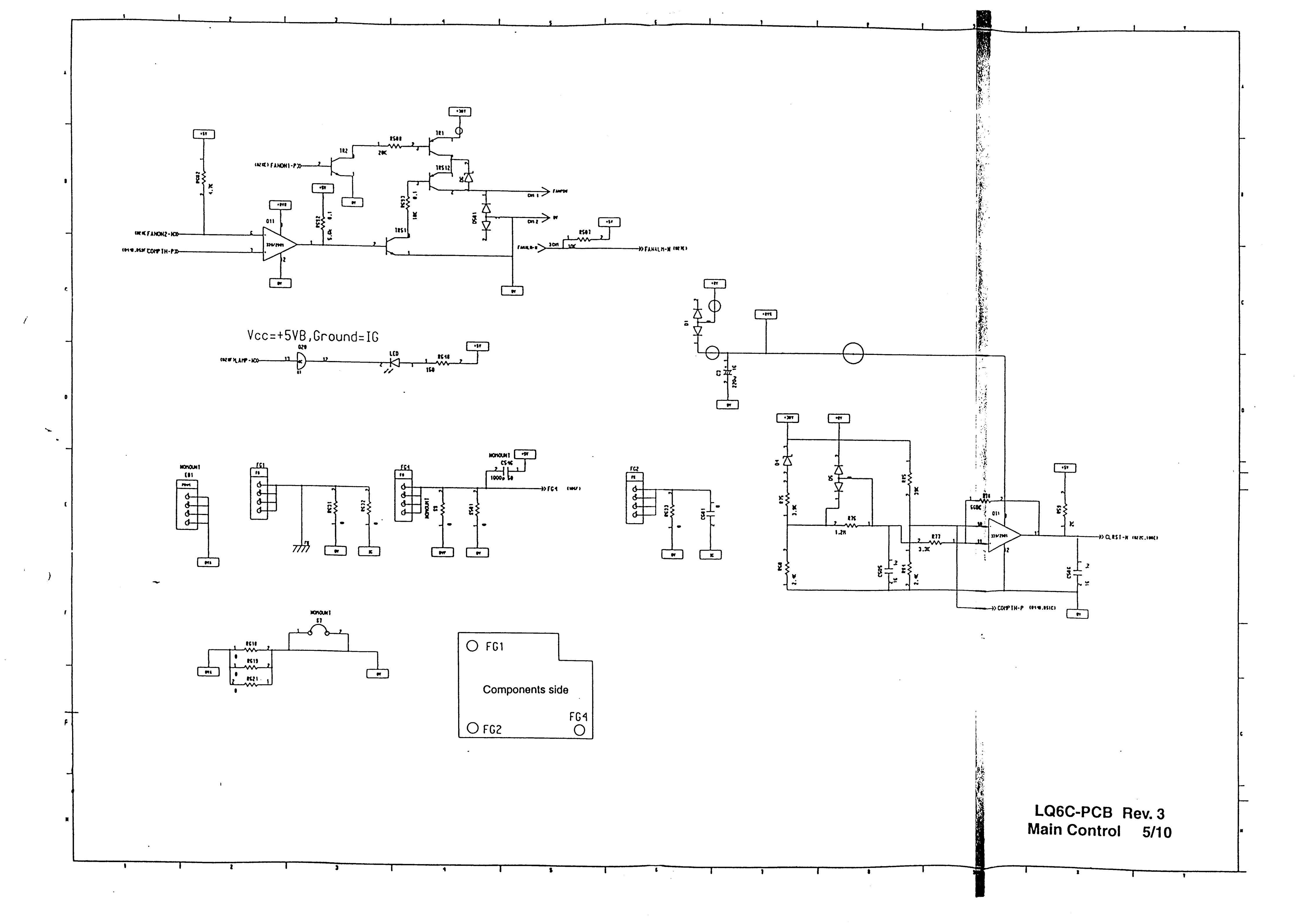

LQ6C-PCB Rev. 3
Main Control 1/10

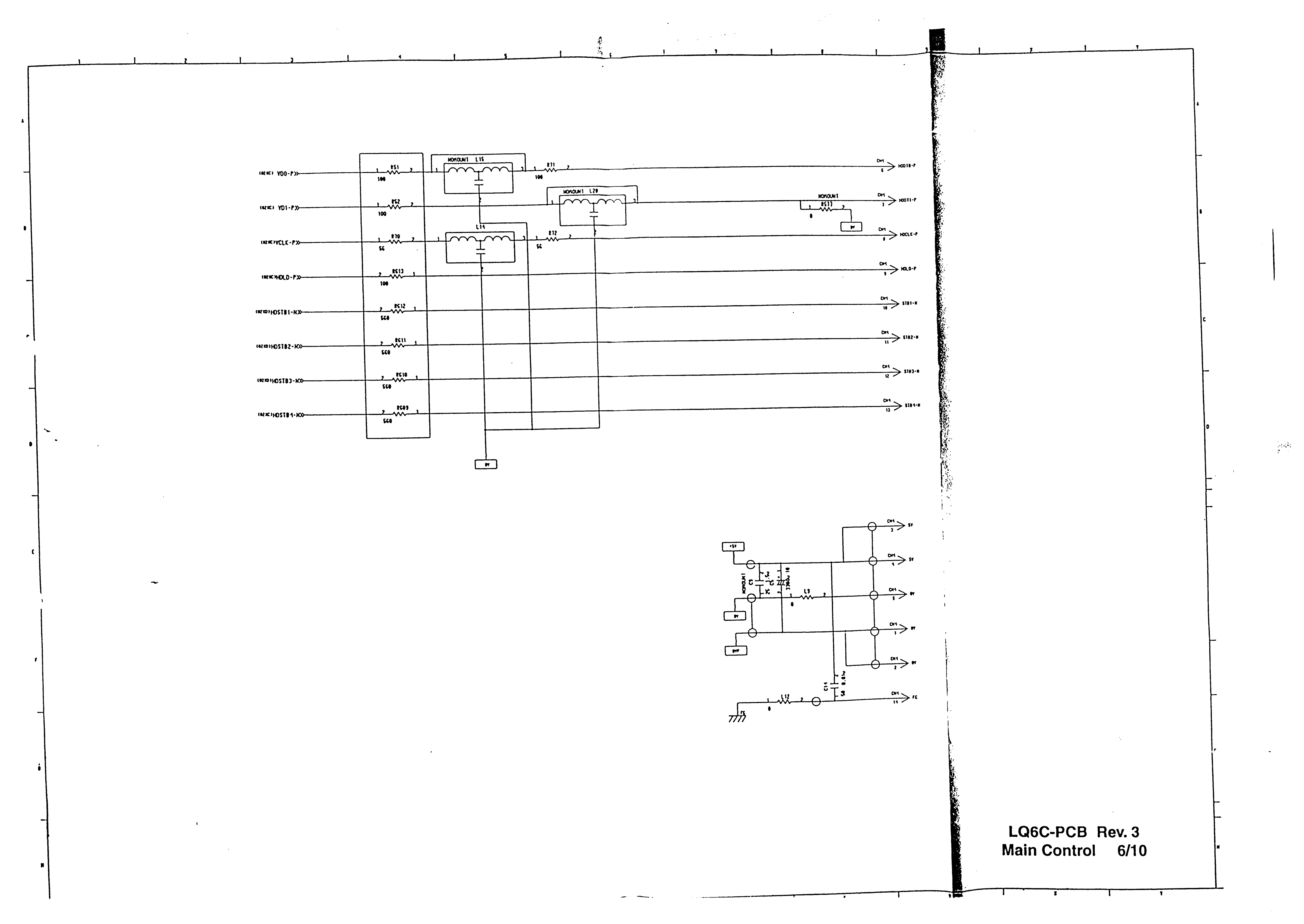

LQ6C-PCB Rev. 3
Main Control 2/10

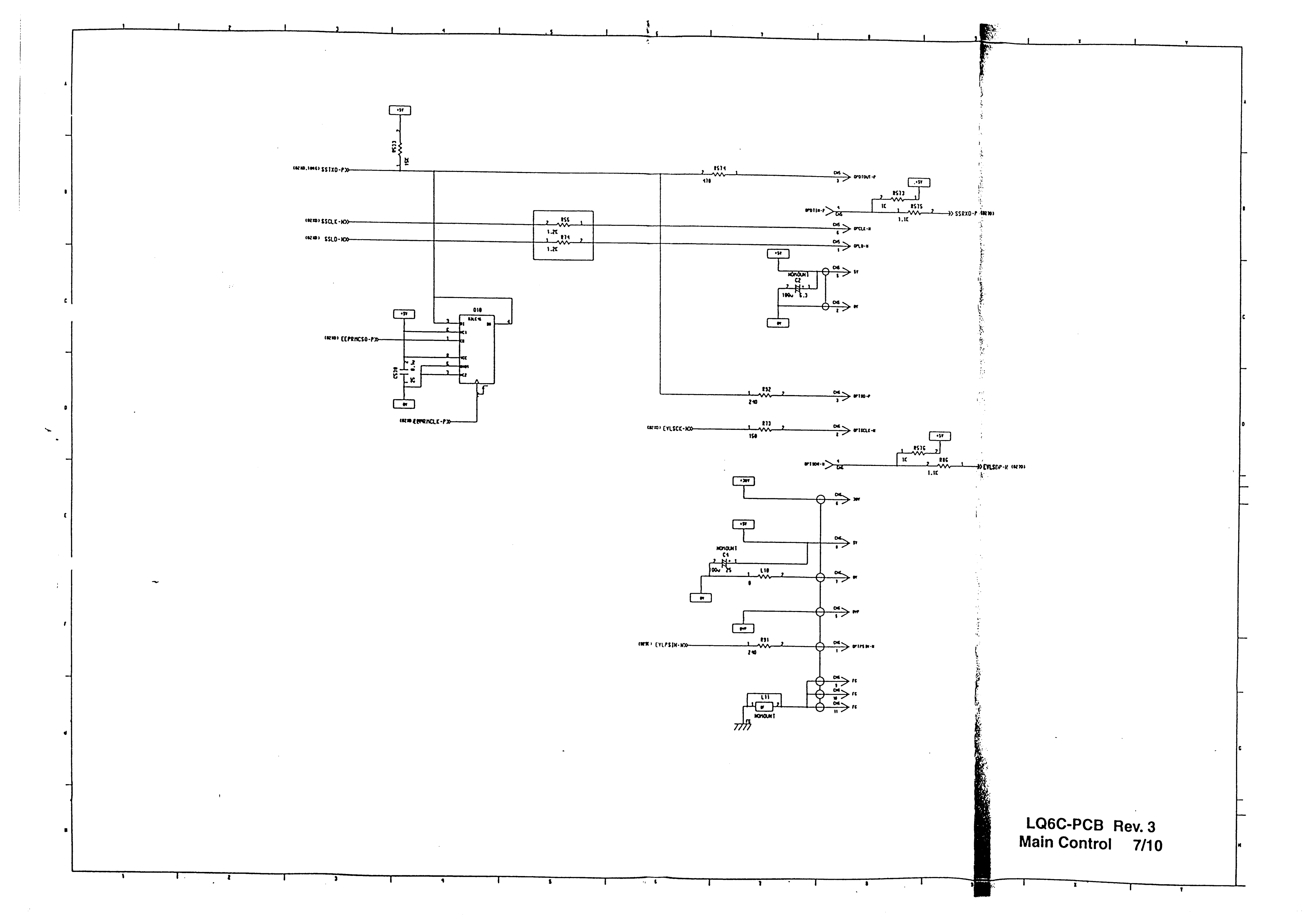

LQ6C-PCB Rev. 3
Main Control 3/10

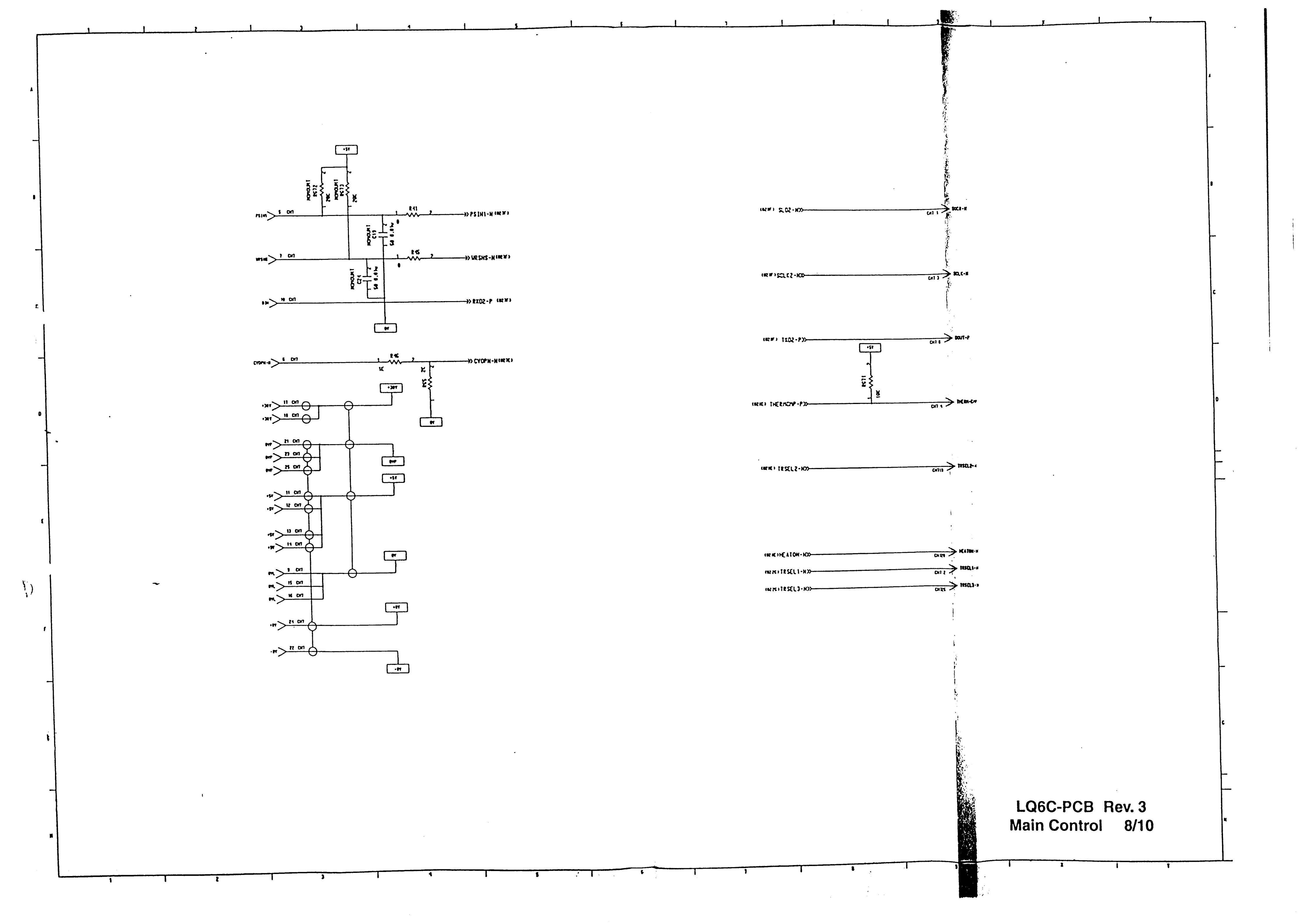


LQ6C-PCB Rev. 3
Main Control 4/10
DMON1-N
COMPTH-P
DMPH1-P
DMPH2-P
RMPH1-P
RMPH2-P
Q7
Q11
PS1
+5V

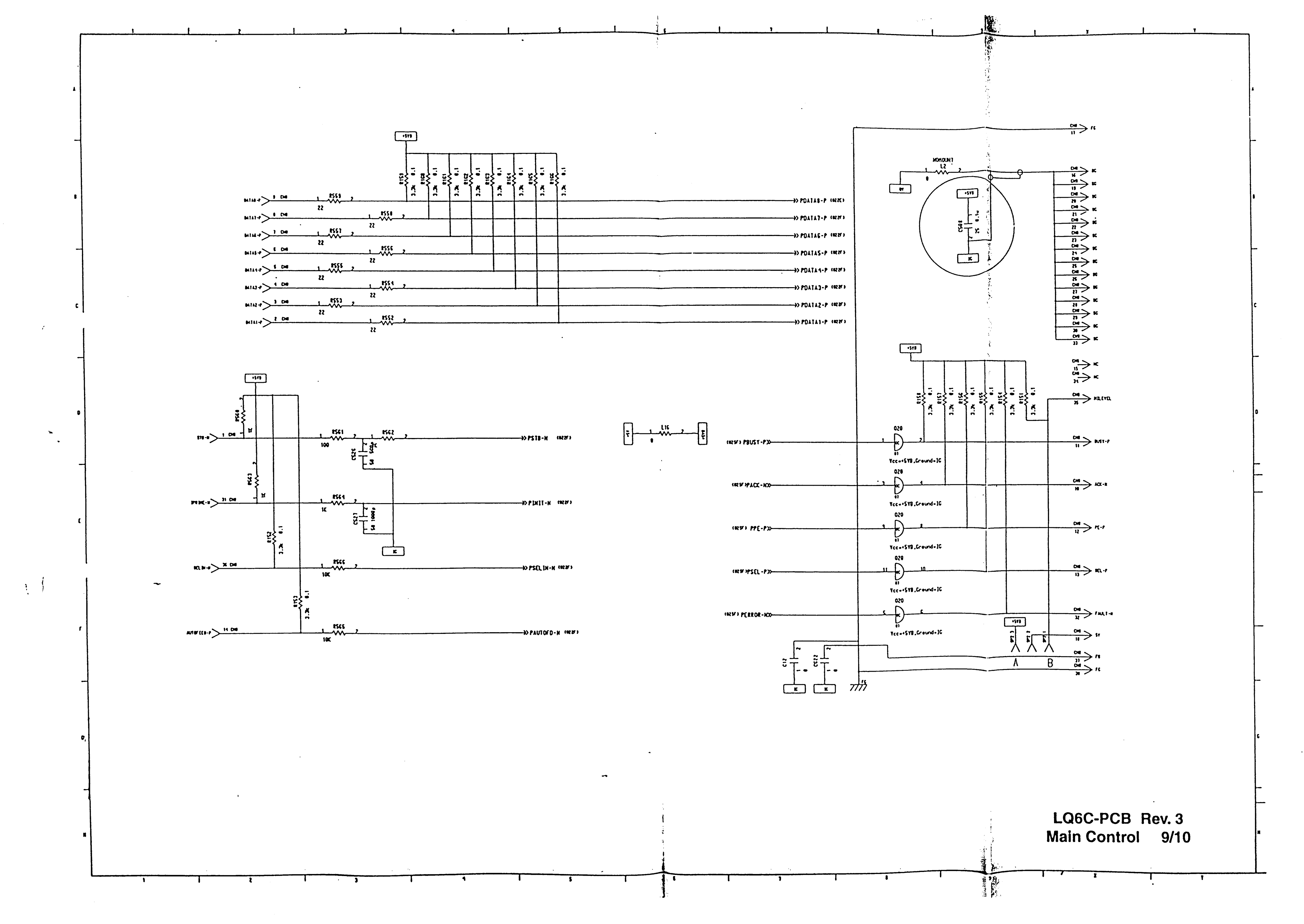

Vcc=+5VB,Ground=IG
Components side
FG1
FG2
FG4
LQ6C-PCB Rev. 3
Main Control 5/10


YD0-P
YD1-P
YCLK-P
HOLD-P
HOSTB1-N
HOSTB2-N
HOSTB3-N
HOSTB4-N
NOMOUNT L15
NOMOUNT L20
L14
NOMOUNT
LQ6C-PCB Rev. 3
Main Control 6/10

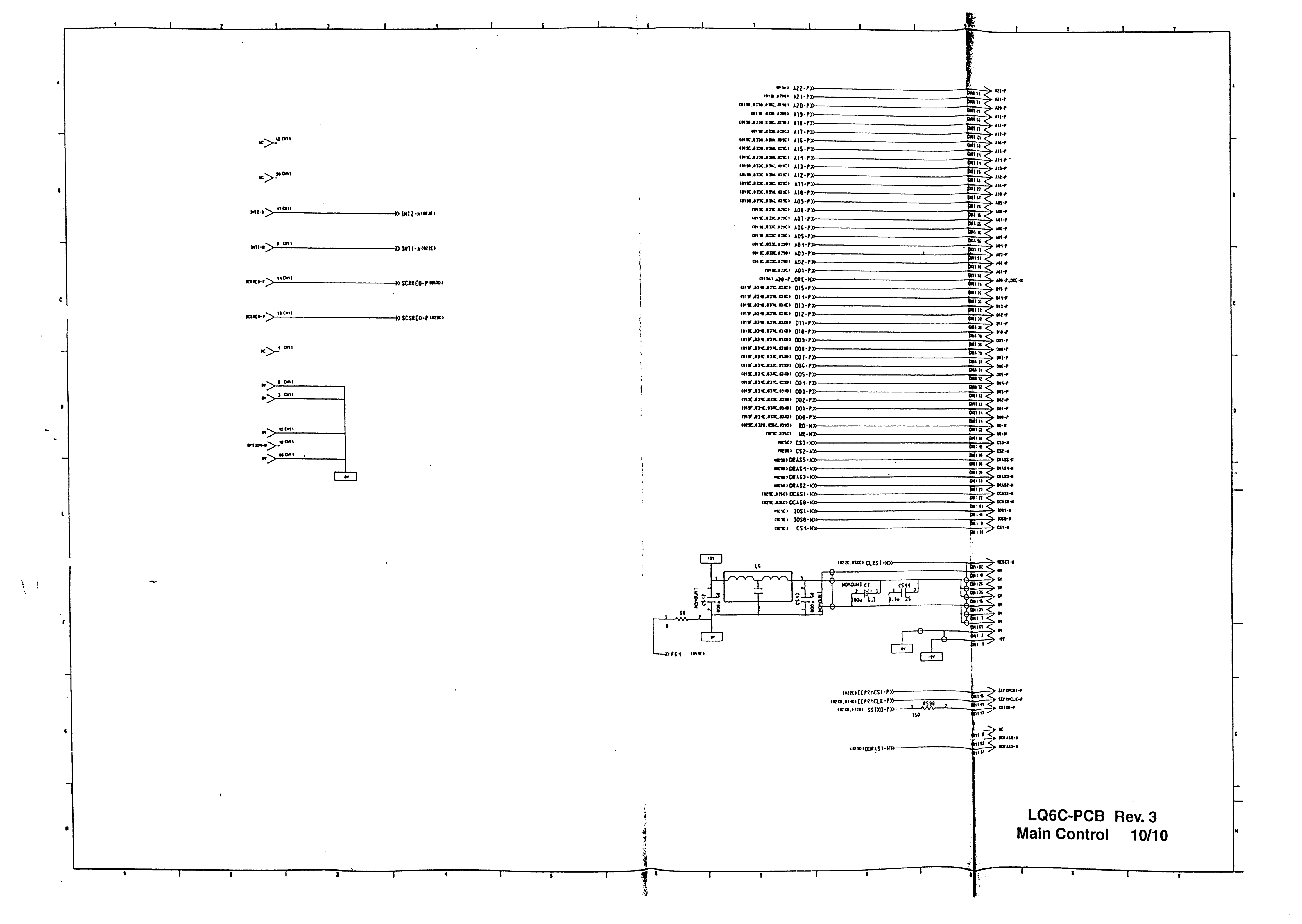

SSTXD-P
SSCLK-N
SSLD-N
EEPRMCS0-P
EEPRMCLK-P
SSRXD-P
EVLSCK-N
EVLSDP-N
EVLPSIN-N
LQ6C-PCB Rev. 3
Main Control 7/10



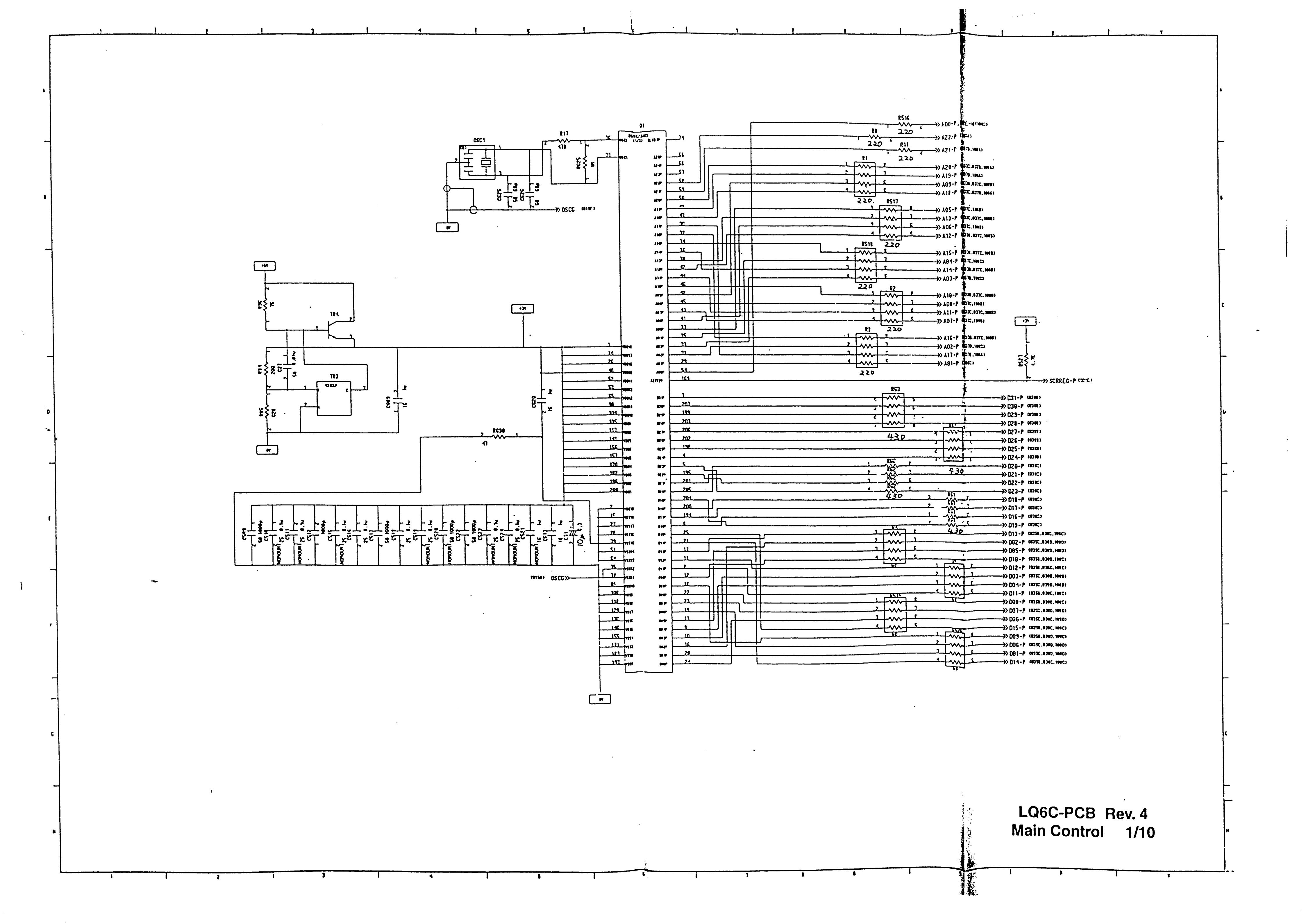
PSIN1-N
VRSHS-N
RXD2-P
CYOPN-N
SLD2-N
SCLK2-N
TXD2-P
THERMCMP-P
TRSEL2-N
HEATON-N
TRSEL1-N
TRSEL3-N
LQ6C-PCB Rev. 3
Main Control 8/10

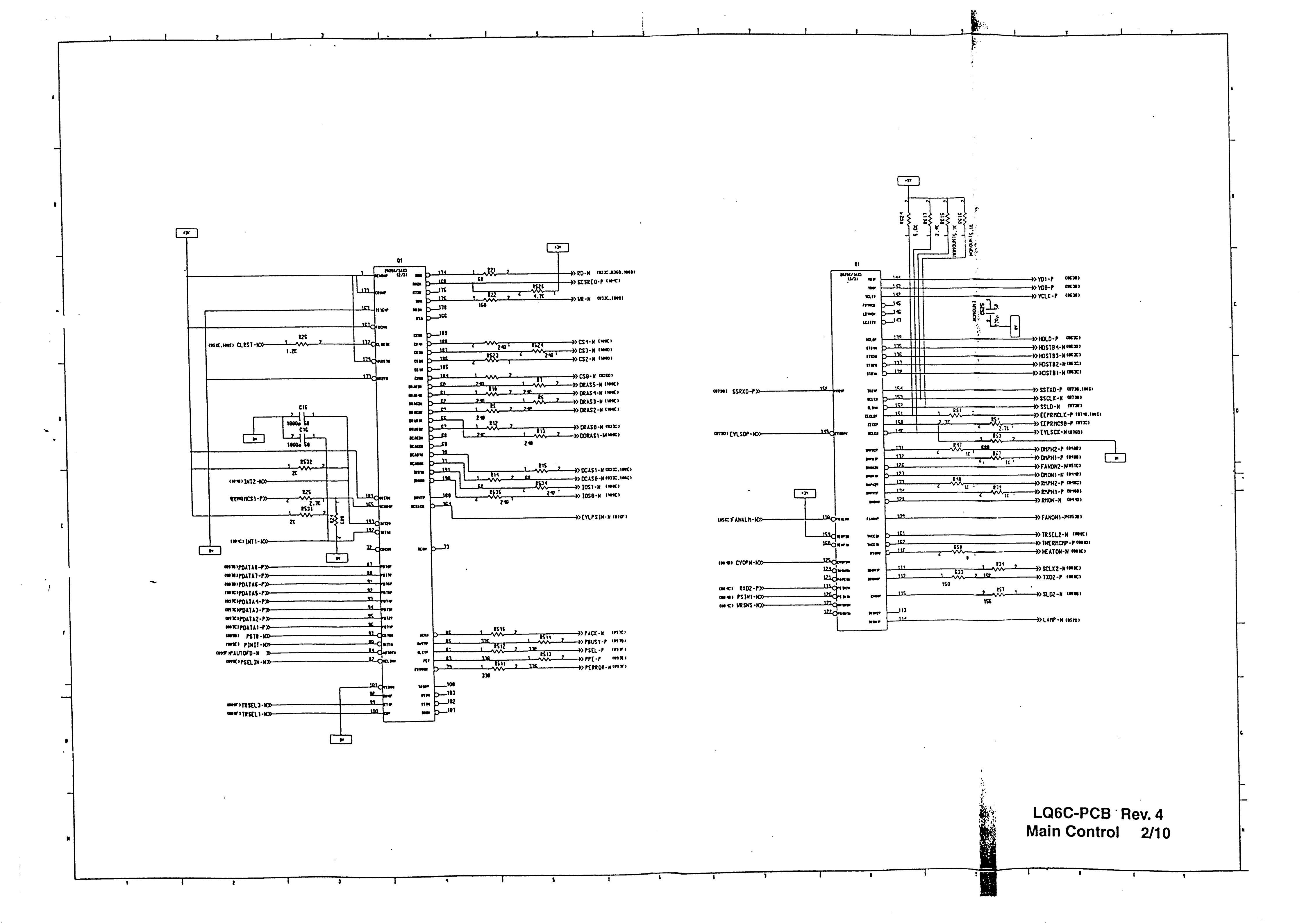


PDATA8-P
PDATA7-P
PDATA6-P
PDATA5-P
PDATA4-P
PDATA3-P
PDATA2-P
PDATA1-P
PSTB-N
PINIT-N
PSELIN-N
PAUTOFD-N
PBUSY-P
PACK-N
PPE-P
PSEL-P
PERROR-N
NONOUNT
L2
L16
A
B
LQ6C-PCB Rev. 3
Main Control 9/10

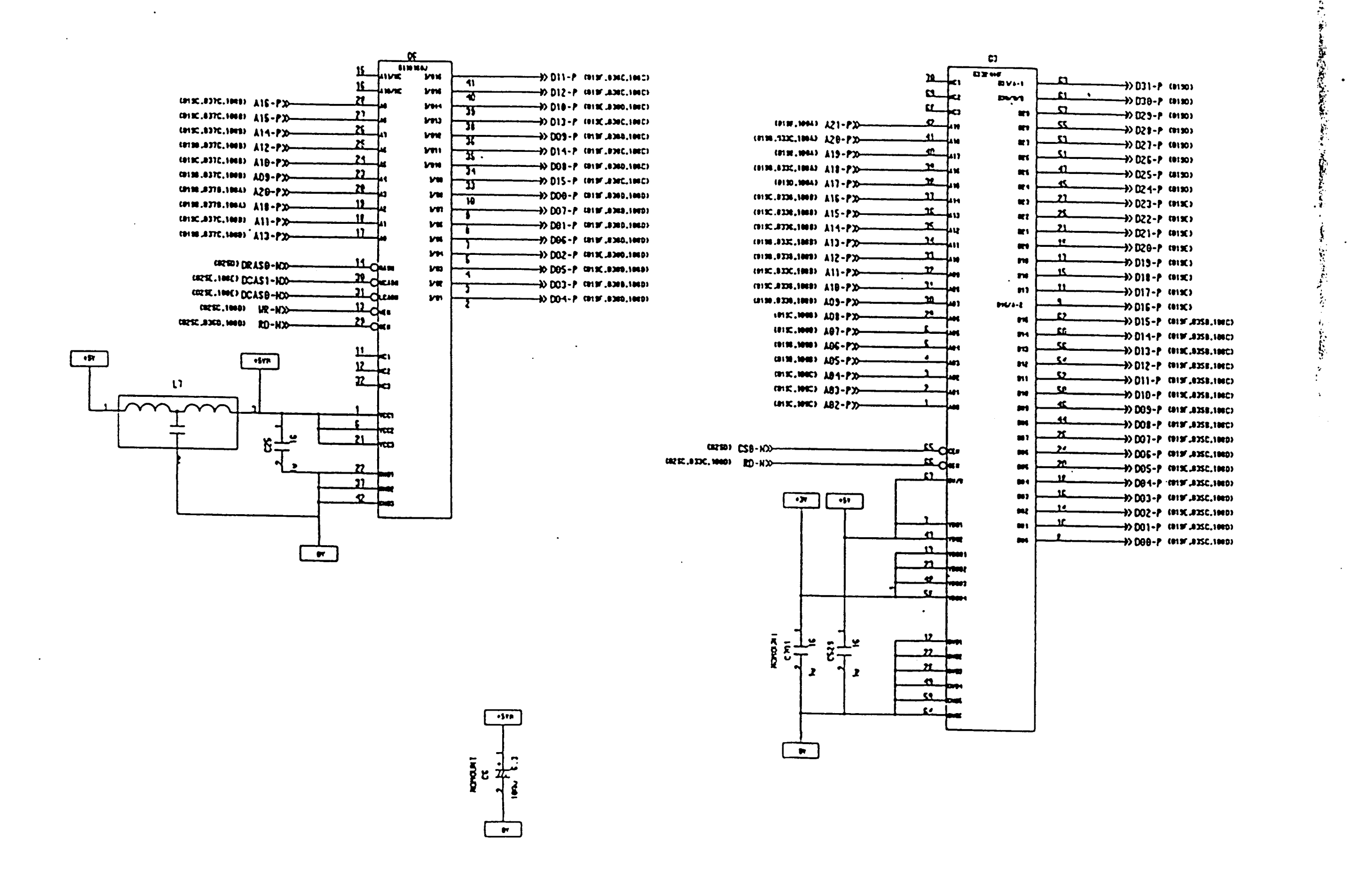


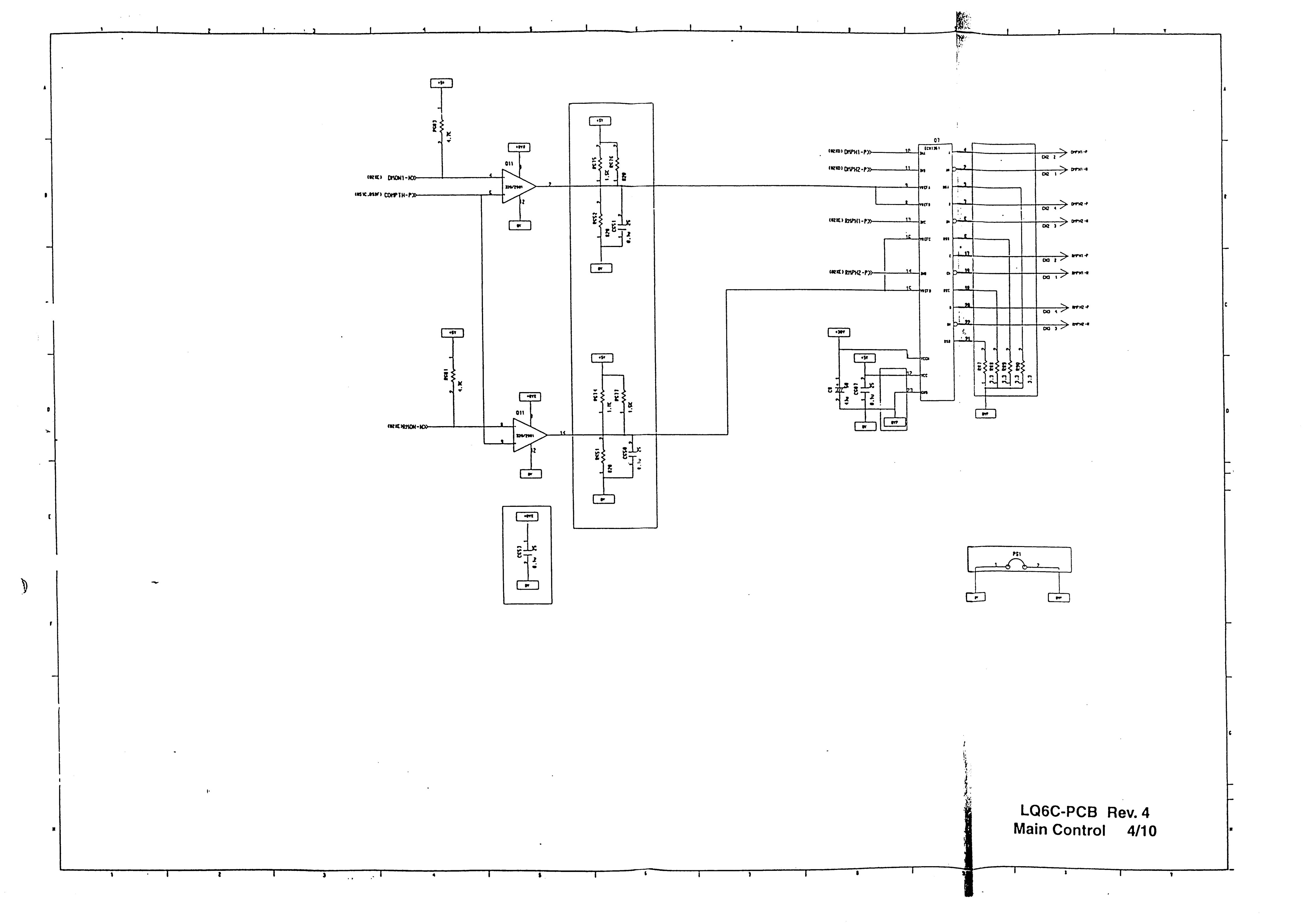
INT2-N
INT1-N
SCSREQ-P
A22-P
A21-P
A20-P
A19-P
A18-P
A17-P
A16-P
A15-P
A14-P
A13-P
A12-P
A11-P
A10-P
A09-P
A08-P
A07-P
A06-P
A05-P
A04-P
A03-P
A02-P
A01-P
D15-P
D14-P
D13-P
D12-P
D11-P
D10-P
D09-P
D08-P
D07-P
D06-P
D05-P
D04-P
D03-P
D02-P
D01-P
D00-P
RD-N
WR-N
CS3-N
CS2-N
DRAS5-N
DRAS4-N
DRAS3-N
DRAS2-N
DCAS1-N
DCAS0-N
IOS1-N
IOS0-N
CS4-N
CLRST-N
L6
C7
CS14
CS12
CS13
FG4
EEPRMCS1-P
EEPRMCLK-P
SSTXD-P
DDRAS1-N
LQ6C-PCB Rev. 3
Main Control 10/10


LQ6C-PCB Rev. 4
Main Control 1/10

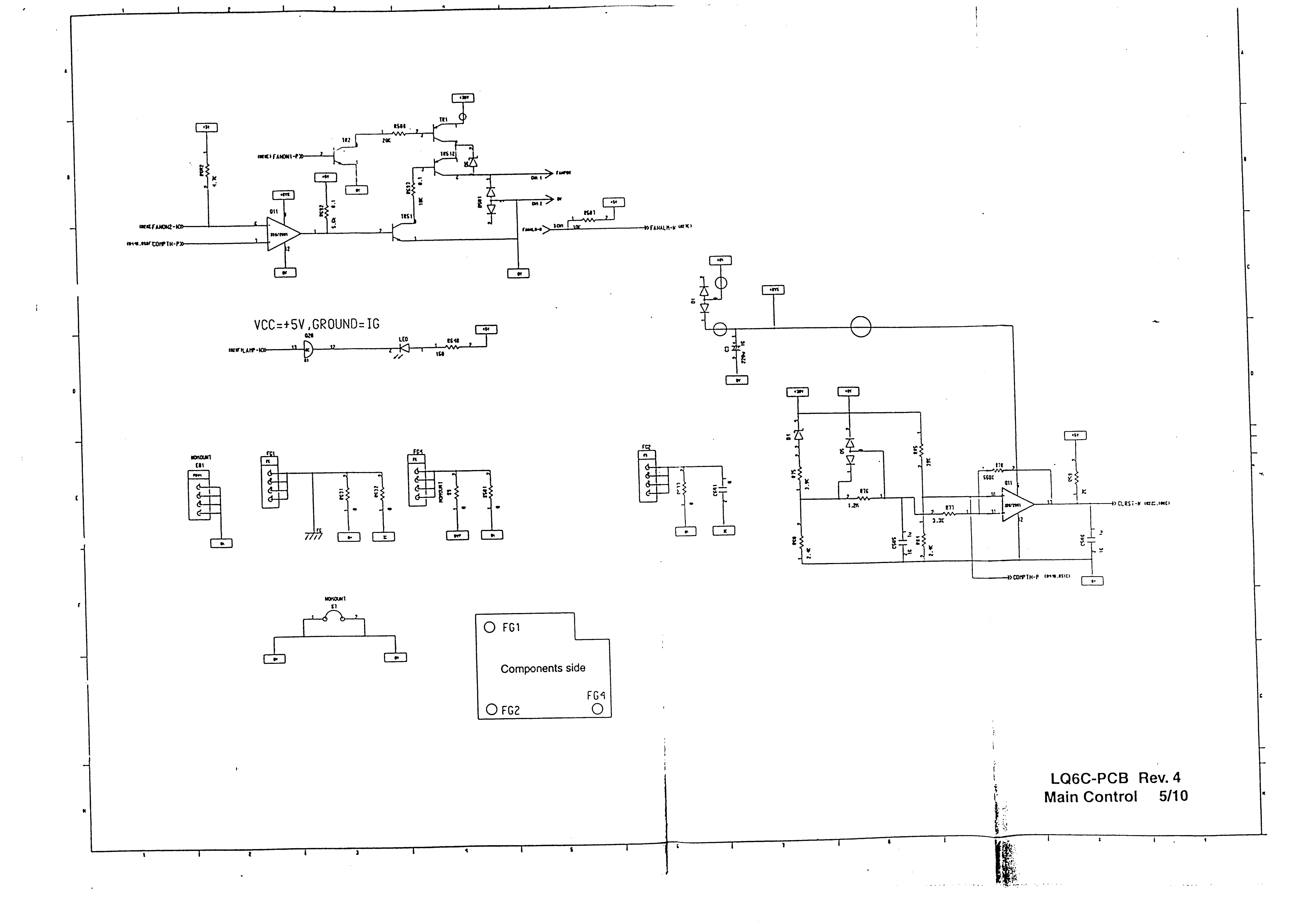


RD-N
SCSREQ-P
WR-N
CS4-N
CS3-N
CS2-N
CS0-N
DRAS5-N
DRAS4-N
DRAS3-N
DRAS2-N
DRAS0-N
DDRAS1-N
DCAS1-N
DCAS0-N
IOS1-N
IOS0-N
EVLPSIN-N
CLRST-N
INT2-N
EEPRMCS1-P
INT1-N
PDATA8-P
PDATA7-P
PDATA6-P
PDATA5-P
PDATA4-P
PDATA3-P
PDATA2-P
PDATA1-P
PSTB-N
PINIT-N
AUTOFD-N
PSELIN-N
PACK-N
PBUSY-P
PSEL-P
PPE-P
PERROR-N
TRSEL3-N
TRSEL1-N
YD1-P
YD0-P
YCLK-P
HOLD-P
HOSTB4-N
HOSTB3-N
HOSTB2-N
HOSTB1-N
SSTXD-P
SSCLK-N
SSLD-N
EEPRMCLK-P
EEPRMCS0-P
EVLSCK-N
DMPH2-P
DMPH1-P
FANON2-N
DMON1-N
RMPH2-P
RMPH1-P
RMON-N
FANON1-P
TRSEL2-N
THERMCMP-P
HEATON-N
SCLK2-N
TXD2-P
SLD2-N
LAMP-N
SSRXD-P
EVLSOP-N
FANALM-N
CVOPN-N
RXD2-P
PSIN1-N
VRSNS-N
+5V
0V
LQ6C-PCB Rev. 4
Main Control 2/10

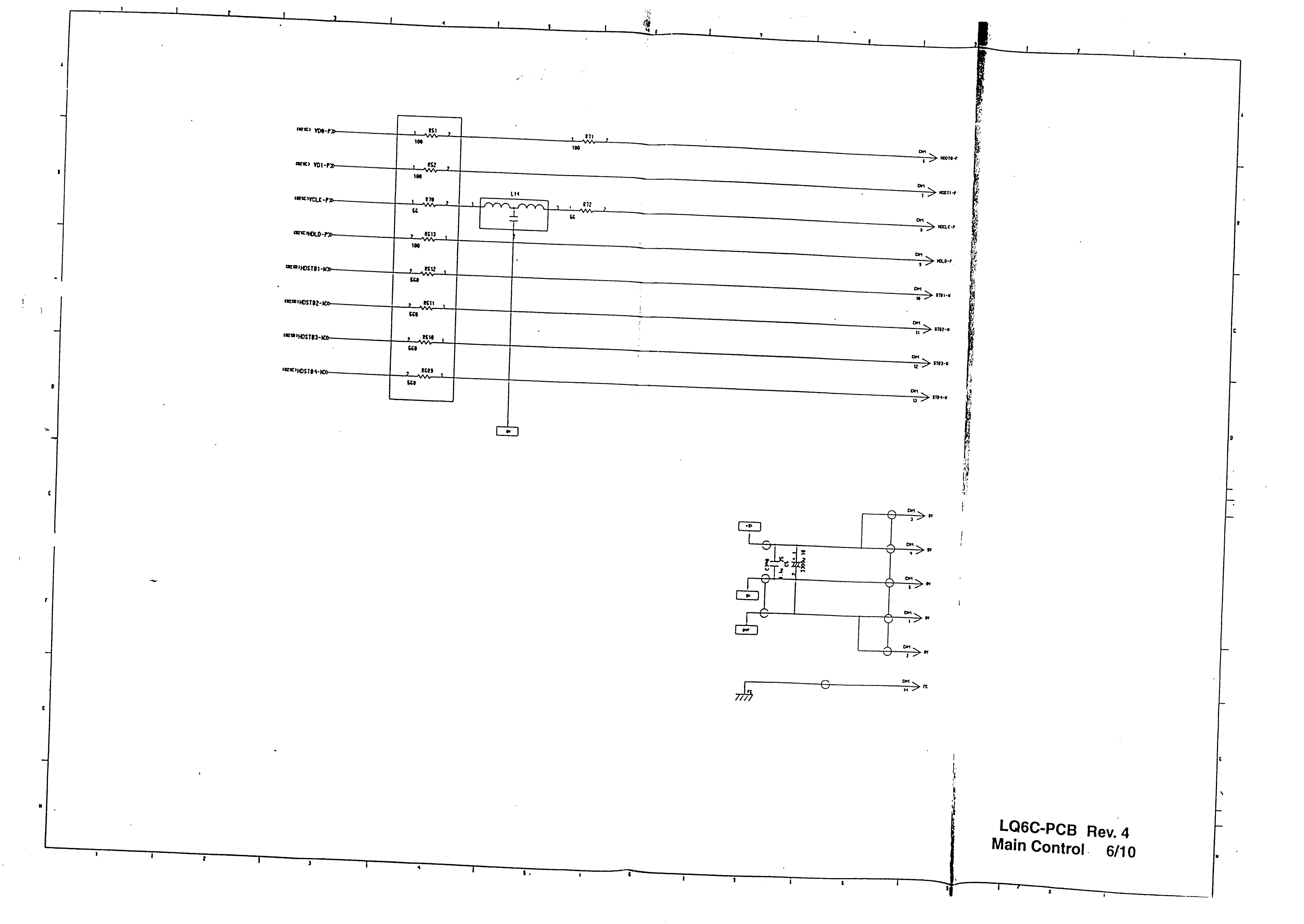

A16-P
A15-P
A14-P
A12-P
A10-P
A09-P
A20-P
A18-P
A11-P
A13-P
DRAS0-N
DCAS1-N
DCAS0-N
WR-N
RD-N
D11-P
D12-P
D10-P
D13-P
D09-P
D14-P
D08-P
D15-P
D00-P
D07-P
D01-P
D06-P
D02-P
D05-P
D03-P
D04-P
L7
A21-P
A20-P
A19-P
A18-P
A17-P
A16-P
A15-P
A14-P
A13-P
A12-P
A11-P
A10-P
A09-P
A08-P
A07-P
A06-P
A05-P
A04-P
A03-P
A02-P
CS0-N
RD-N
D31-P
D30-P
D29-P
D28-P
D27-P
D26-P
D25-P
D24-P
D23-P
D22-P
D21-P
D20-P
D19-P
D18-P
D17-P
D16-P
D15-P
D14-P
D13-P
D12-P
D11-P
D10-P
D09-P
D08-P
D07-P
D06-P
D05-P
D04-P
D03-P
D02-P
D01-P
D00-P



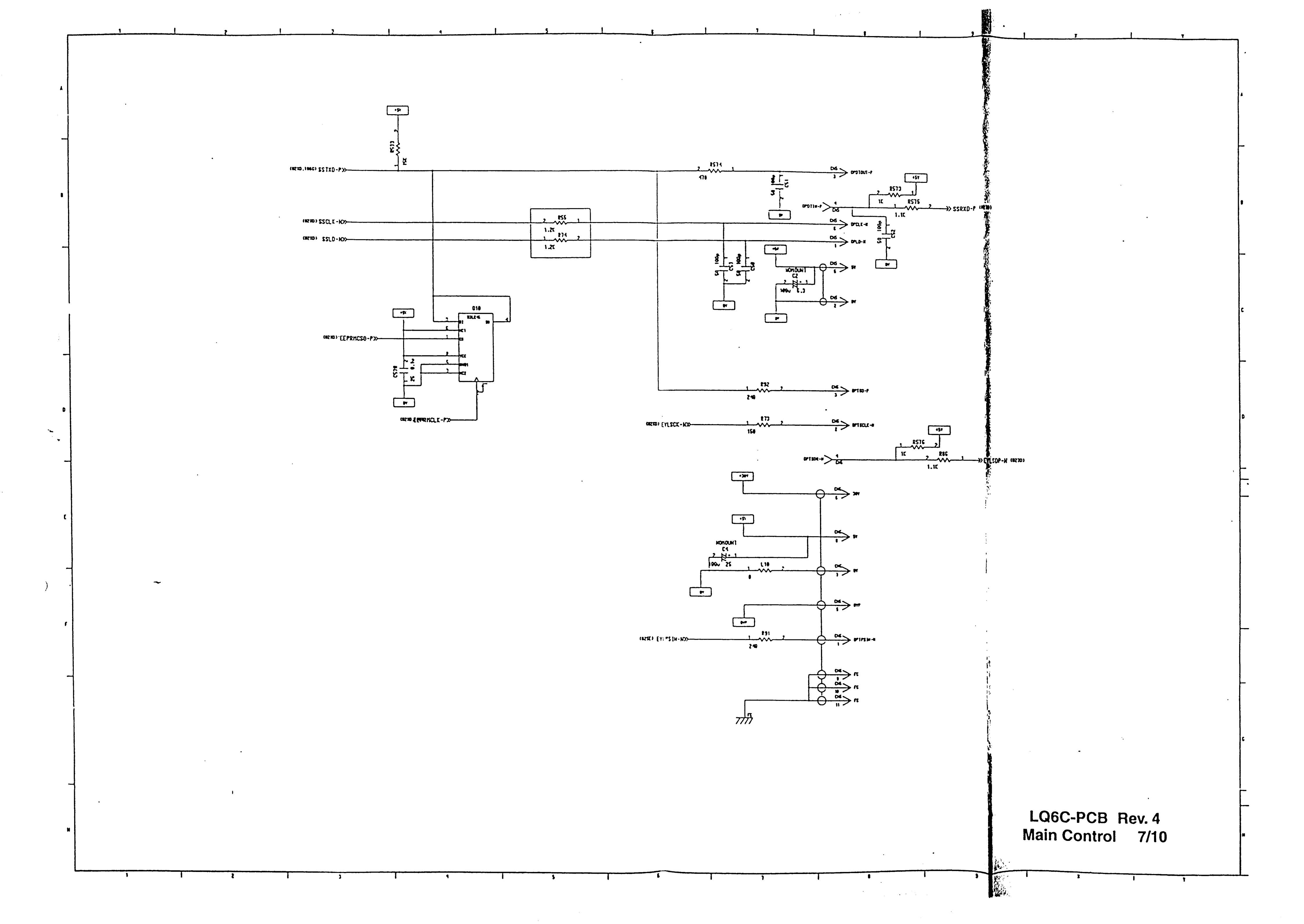
DMON1-N
COMPTH-P
RMON-N
DMPH1-P
DMPH2-P
RMPH1-P
RMPH2-P
Q11
Q7
PS1
LQ6C-PCB Rev. 4
Main Control 4/10



LQ6C-PCB Rev. 4
Main Control 5/10



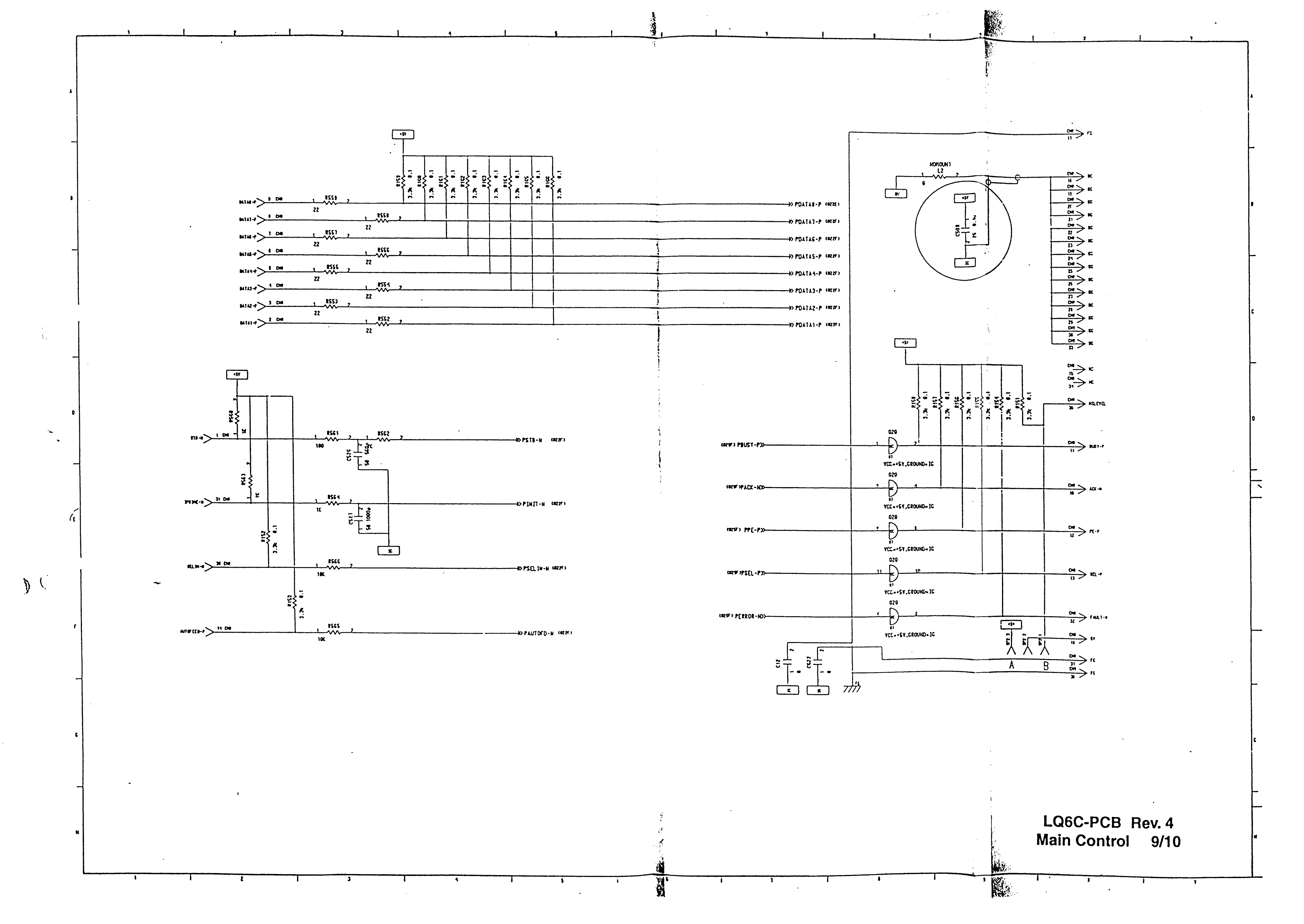
YD0-P
YD1-P
YCLK-P
HOLD-P
HDSTB1-N
HDSTB2-N
HDSTB3-N
HDSTB4-N
L14
LQ6C-PCB Rev. 4
Main Control 6/10


LQ6C-PCB Rev. 4
Main Control 7/10

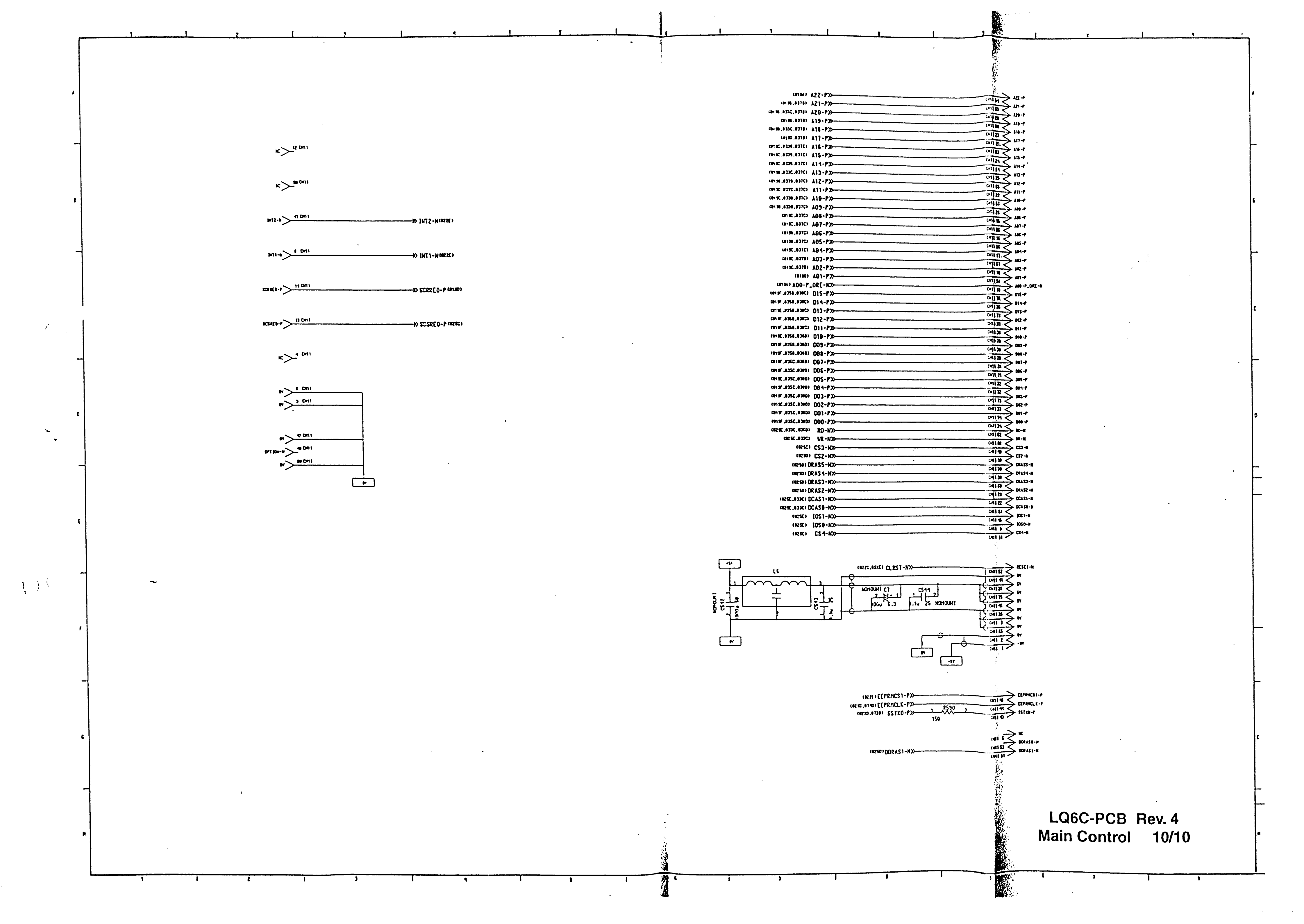
PSIN1-N
VRSNS-N
RXD2-P
CVOPN-N

SLD2-N
SCLK2-N
TXD2-P
THERMCMP-P
T2SEL2-N
HEATON-N
TRSEL1-N
TRSEL3-N

LQ6C-PCB Rev. 4
Main Control 8/10

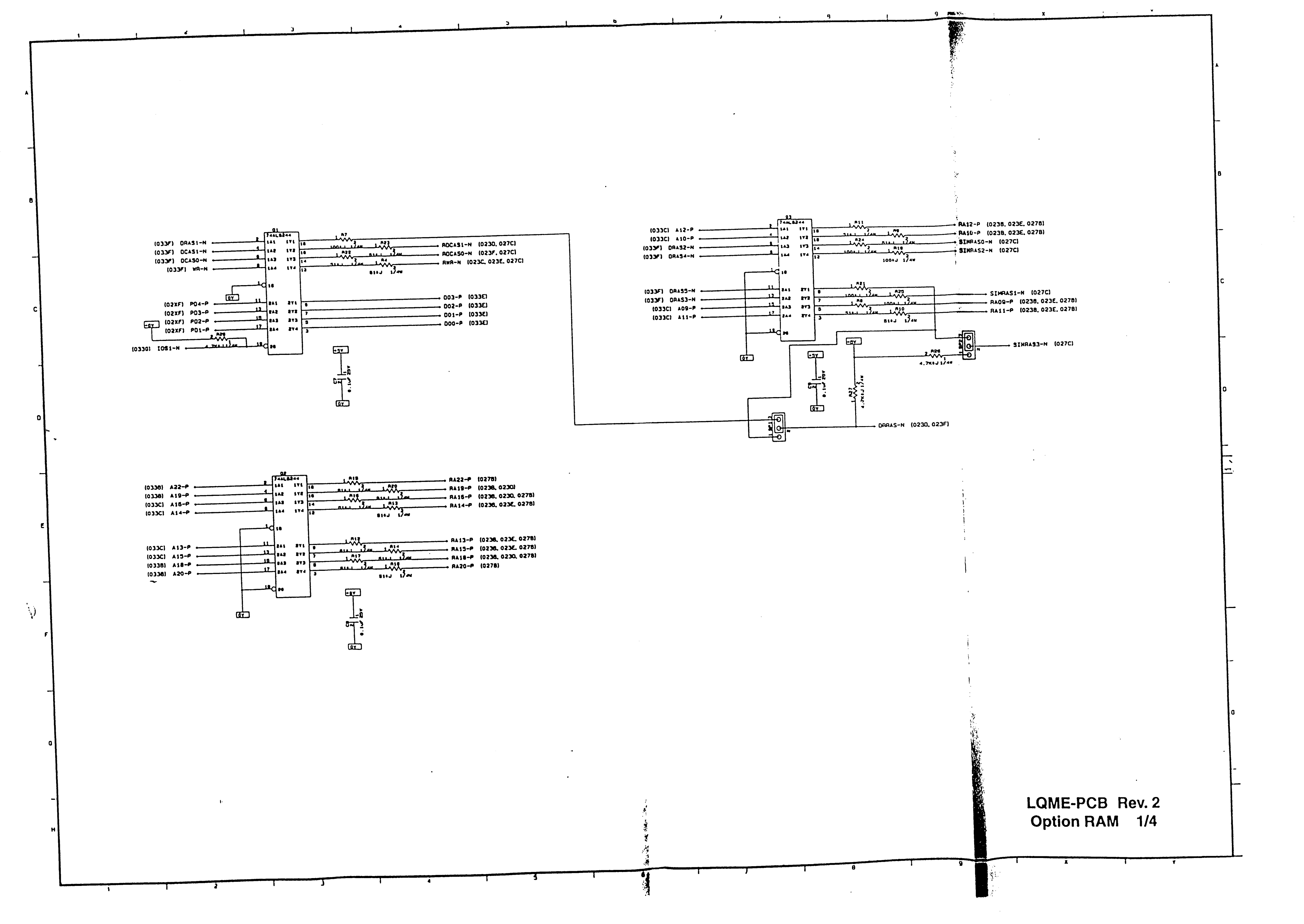


PDATA8-P
PDATA7-P
PDATA6-P
PDATA5-P
PDATA4-P
PDATA3-P
PDATA2-P
PDATA1-P
PSTB-N
PINIT-N
PSELIN-N
PAUTOFD-N
PBUSY-P
PACK-N
PPE-P
PSEL-P
PERROR-N
YCC=+5V,GROUND=IC
NOMOUNT
A
B
LQ6C-PCB Rev. 4
Main Control 9/10

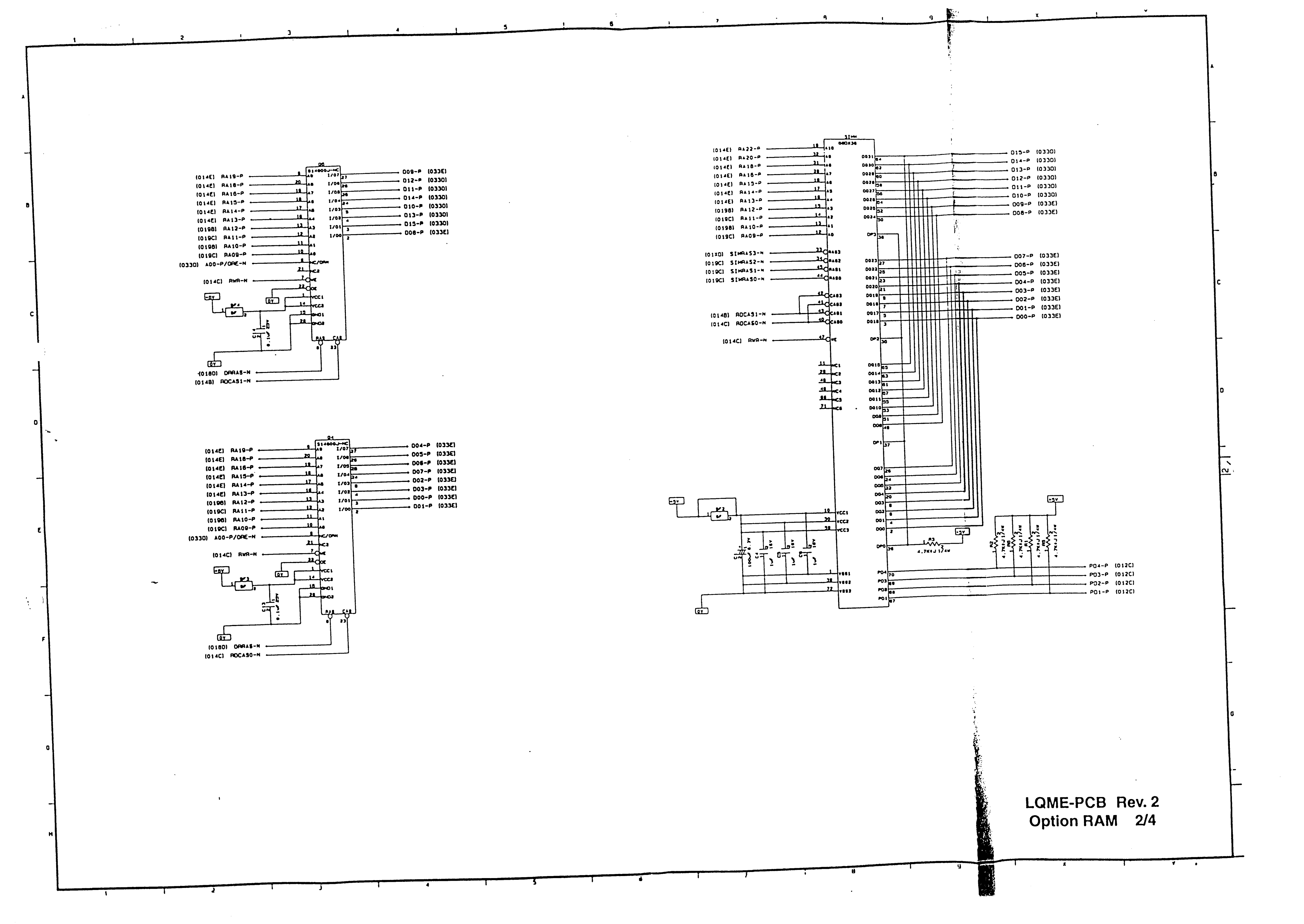

LQ6C-PCB Rev. 4
Main Control 10/10
INT2-N
INT1-N
SCSREQ-P
CLRST-N
EEPRMCS1-P
EEPRMCLK-P
SSTXO-P
DDRAS1-N

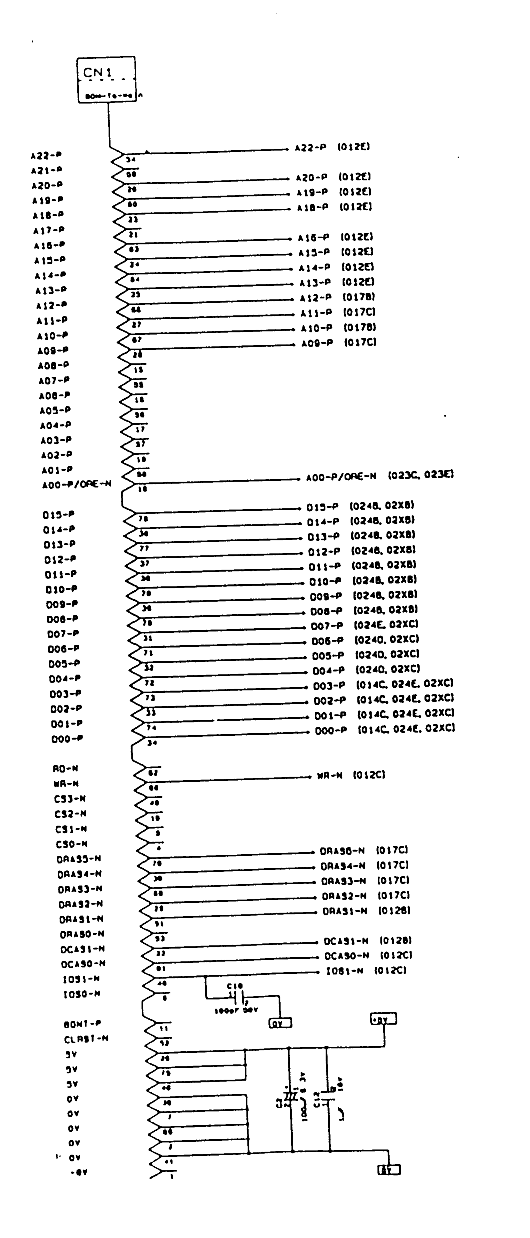
OLCC-2-PCB Rev. 1
Operator Panel 1/1

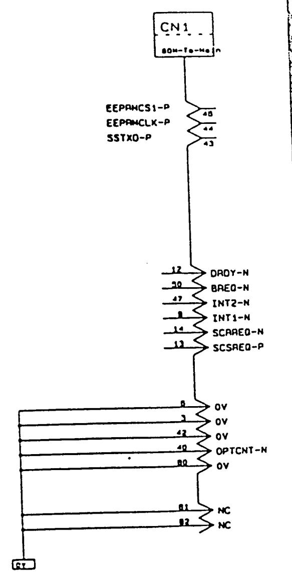
CN1
OP-DATA-IN
OP-LOAD-N
OP-DATA-OUT
OP-CLOCK-N
+5V
0V
SEL3910D-YZ



LQME-PCB Rev. 2
Option RAM 1/4
74ALS244
(033F) DRAS1-N
(033F) DCAS1-N
(033F) DCAS0-N
(033F) WR-N
(02XF) PO4-P
(02XF) PO3-P
(02XF) PO2-P
(02XF) PO1-P
(0330) IOS1-N
RDCAS1-N (0230, 027C)
RDCAS0-N (023F, 027C)
RWR-N (023C, 023E, 027C)
DO3-P (033E)
DO2-P (033E)
DO1-P (033E)
DO0-P (033E)
(033C) A12-P
(033C) A10-P
(033F) DRAS2-N
(033F) DRAS4-N
(033F) DRAS5-N
(033F) DRAS3-N
(033C) A09-P
(033C) A11-P
RA12-P (0238, 023E, 0278)
RA10-P (0238, 023E, 0278)
SIMRAS0-N (027C)
SIMRAS2-N (027C)
SIMRAS1-N (027C)
RA09-P (0238, 023E, 0278)
RA11-P (0238, 023E, 0278)
SIMRAS3-N (027C)
DRRAS-N (0230, 023F)
(0338) A22-P
(0338) A19-P
(033C) A16-P
(033C) A14-P
(033C) A13-P
(033C) A15-P
(0338) A18-P
(0338) A20-P
RA22-P (0278)
RA19-P (0238, 0230)
RA16-P (0238, 0230, 0278)
RA14-P (0238, 023E, 0278)
RA13-P (0238, 023E, 0278)
RA15-P (0238, 023E, 0278)
RA18-P (0238, 0230, 0278)
RA20-P (0278)


LQME-PCB Rev. 2
Option RAM 2/4



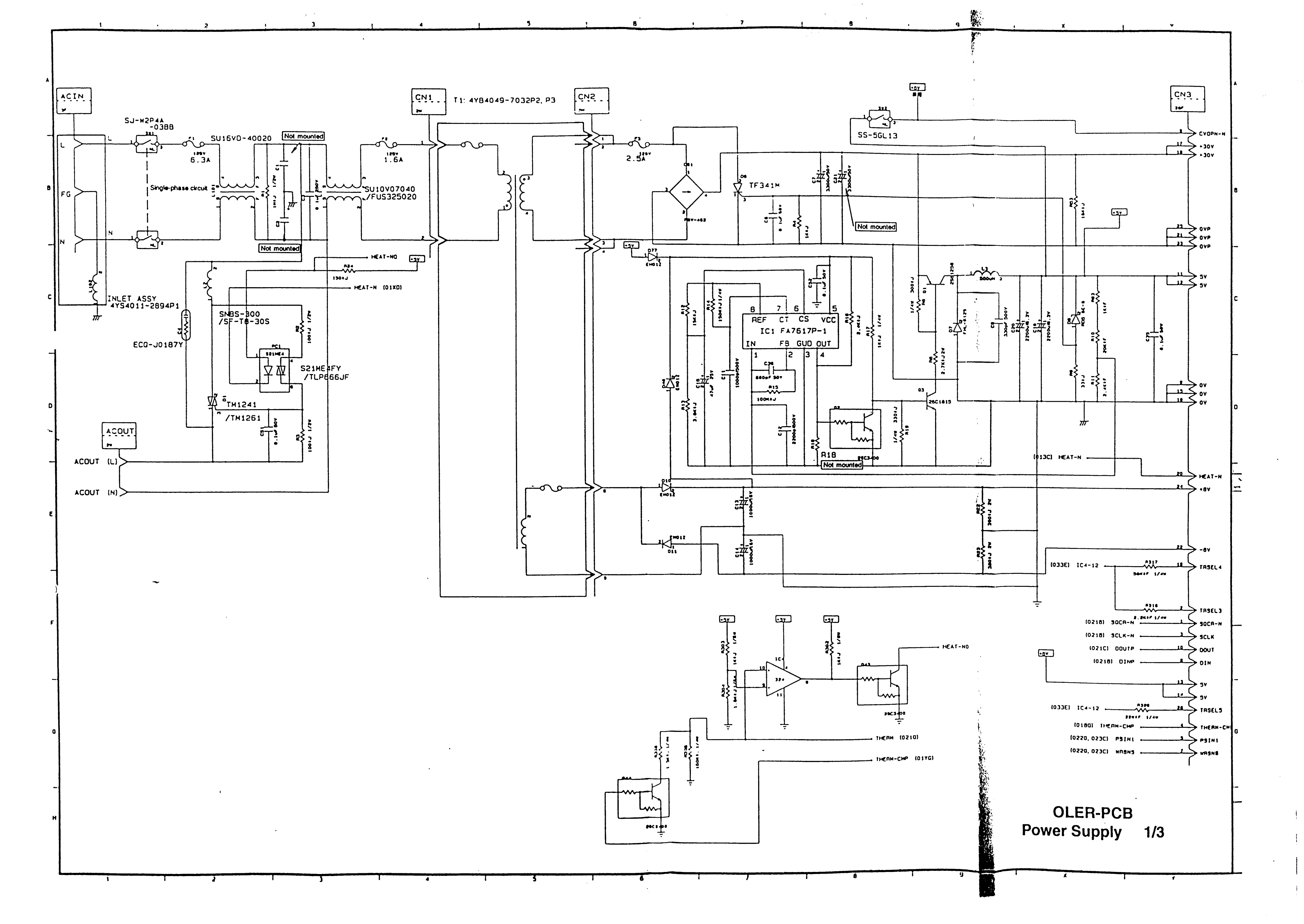


LQME-PCB Rev. 2
Option RAM 3/4

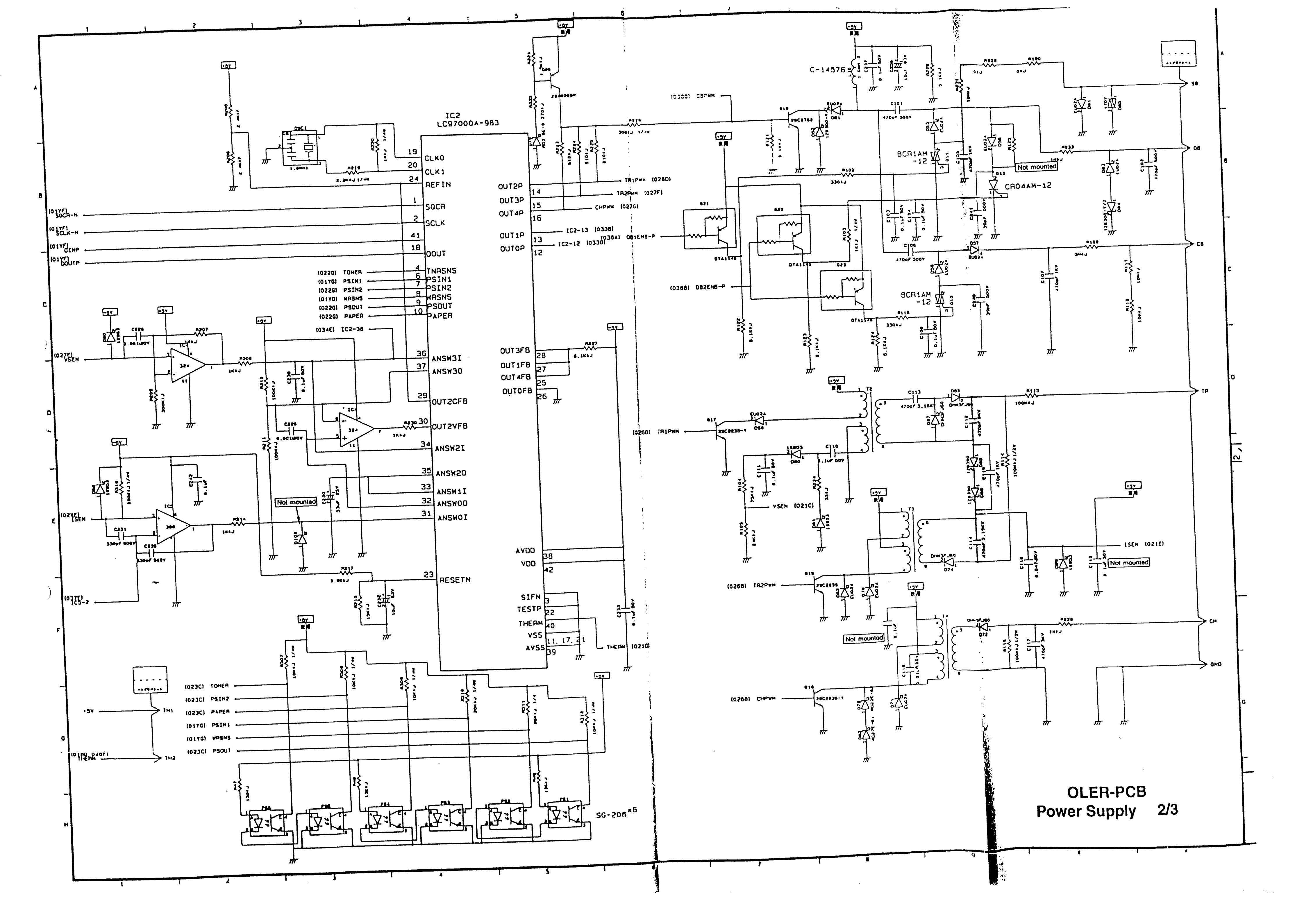
Connector : 80M-To-Main
PART No. : 224A3515P0800
PART Symbol : CN1

Pin	Signal	Location	Pin	Signal	Location
1	-8V	033H	51	DRAS1-N	033F
2	0V	033G	52	CLRST-N	033G
3	0V	038D	53	DRAS0-N	033F
4	CS0-N	033F	54	A22-P	033B
5	CS1-N	033F	55	A07-P	033C
6	0V	038D	56	A05-P	033D
7	0V	033G	57	A03-P	033D
8	INT1-N	038C	58	A01-P	033D
9	IOS0-N	033G	59	A21-P	033B
10	CS2-N	033F	60	A19-P	033B
11	BGNT-P	033G	61	DCAS0-N	033F
12	DRDY-N	038C	62	RD-N	033E
13	SCSREQ-P	038C	63	A16-P	033C
14	SCRREQ-N	038C	64	A14-P	033C
15	A08-P	033C	65	0V	033G
16	A06-P	033C	66	A12-P	033C
17	A04-P	033D	67	A10-P	033C
18	A02-P	033D	68	WR-N	033F
19	A00-P/DRE-N	033D	69	DRAS3-N	033F
20	A20-P	033B	70	DRAS5-N	033F
21	A17-P	033C	71	D06-P	033E
22	DCAS1-N	033F	72	D04-P	033E
23	A18-P	033B	73	D03-P	033E
24	A15-P	033C	74	D01-P	033E
25	A13-P	033C	75	5V	033G
26	5V	033G	76	D15-P	033D
27	A11-P	033C	77	D13-P	033D
28	A09-P	033C	78	D10-P	033D
29	DRAS2-N	033F	79	D08-P	033E
30	DRAS4-N	033F	80	0V	038D
31	D07-P	033E	81	NC	038D
32	D05-P	033E	82	NC	038D
33	D02-P	033E			
34	D00-P	033E			
35	0V	033G			
36	D14-P	033D			
37	D12-P	033D			
38	D11-P	033D			
39	D09-P	033E			
40	OPTCNT-N	038D			
41	0V	033H			
42	0V	038D			
43	SSTXD-P	039B			
44	EEPRMCLK-P	039B			
45	EEPRMCS1-P	039B			
46	5V	033G			
47	INT2-N	038C			
48	IOS1-N	033G			
49	CS3-N	033F			
50	BREQ-N	038C			

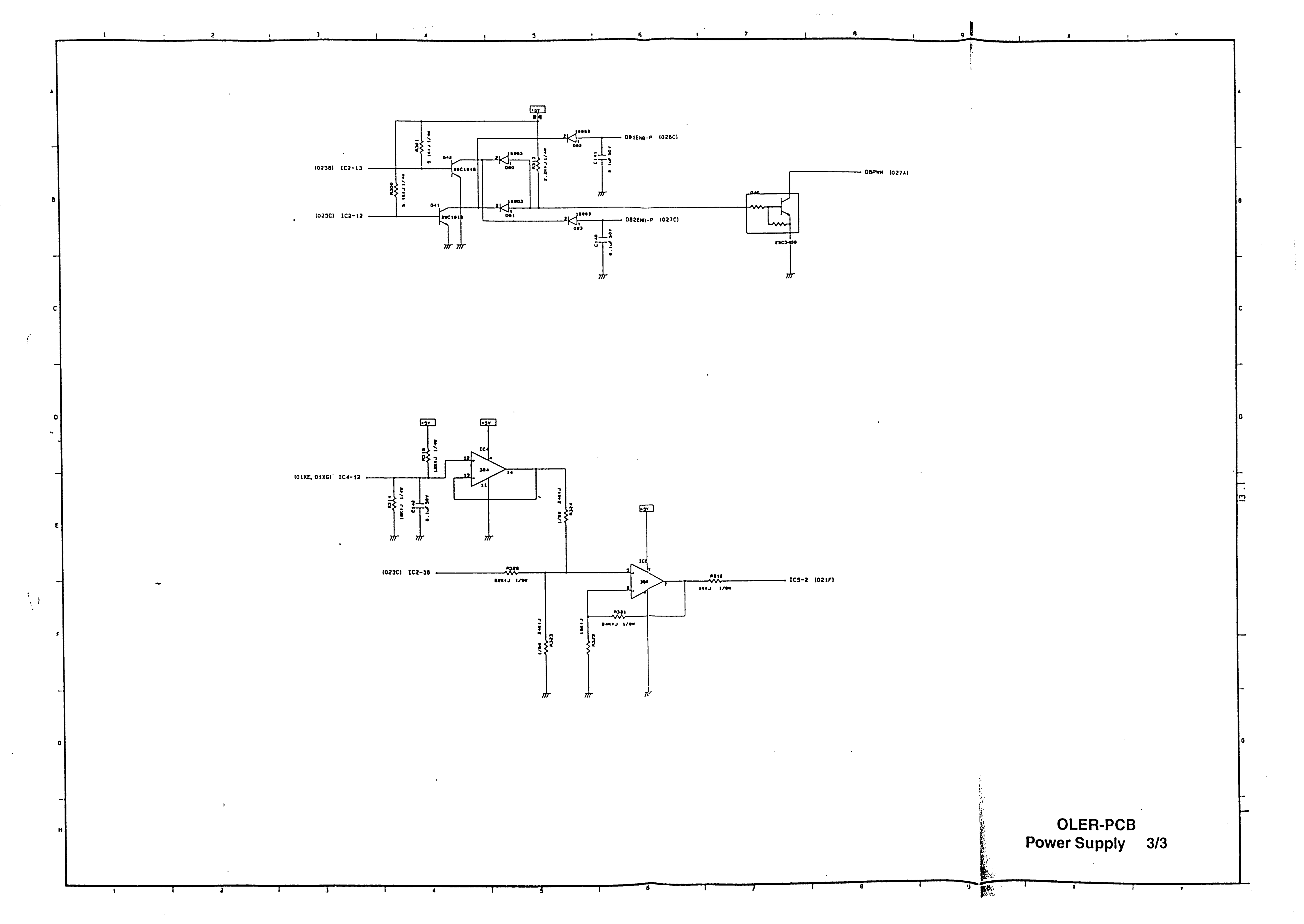
LQME-PCB Rev. 2
Option RAM 4/4



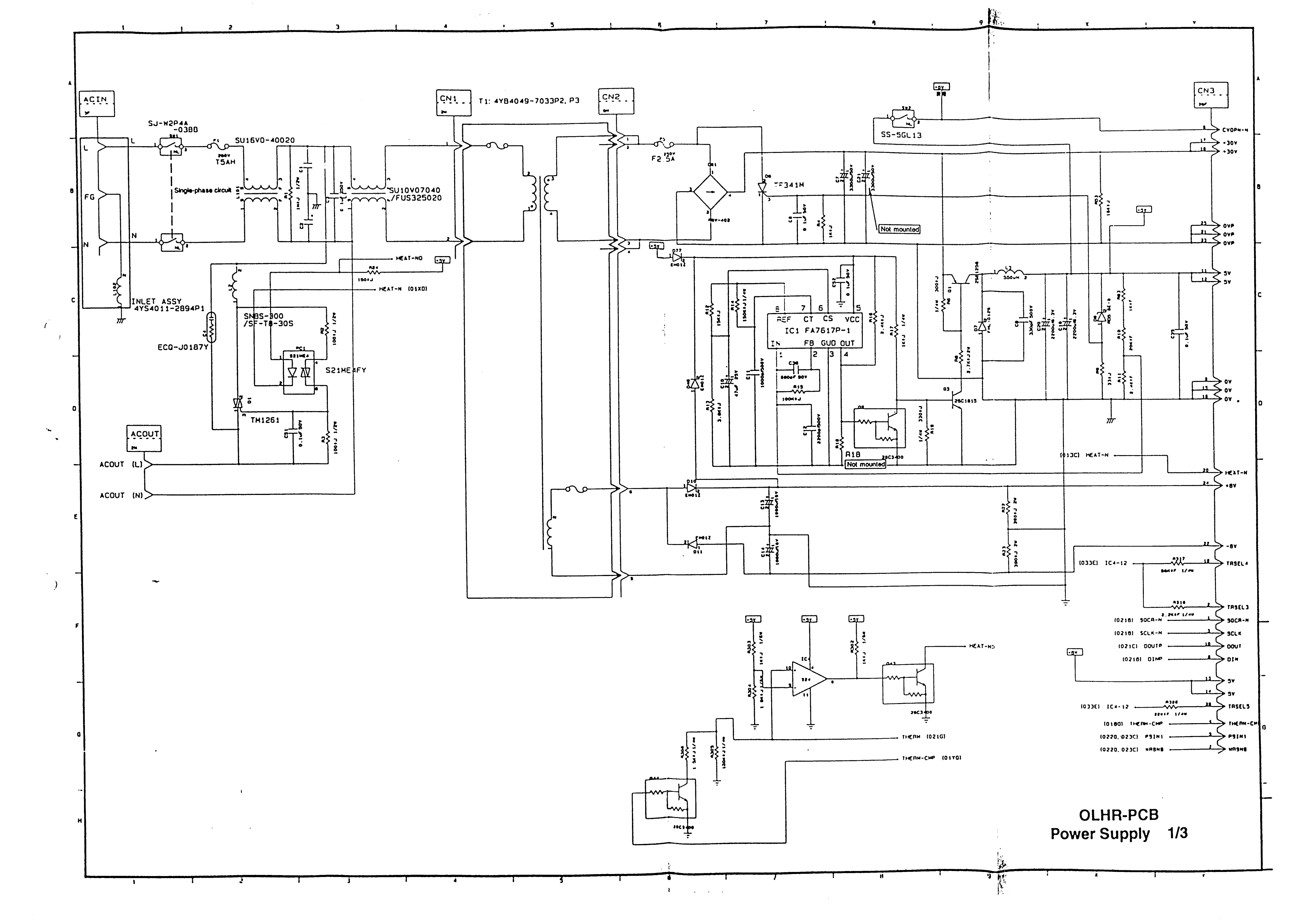
ACIN
SJ-W2P4A
-03BB
SU16V0-40020
Not mounted
Single-phase circuit
6.3A
1.6A
SU10V07040
/FUS325020
Not mounted
INLET ASSY
4YS4011-2894P1
ECQ-J0187Y
SNBS-300
/SF-T8-30S
S21ME4FY
/TLP666JF
TM1241
/TM1261
ACOUT
ACOUT (L)
ACOUT (N)
HEAT-NO
HEAT-N (01XD)
CN1
T1: 4YB4049-7032P2, P3
CN2
2.5A
TF341M
Not mounted
SS-5GL13
CN3
CVOPN-N
+30V
+30V
0VP
0VP
0VP
5V
5V
IC1 FA7617P-1
REF
CT
CS
VCC
IN
FB
GUO
OUT
R18
Not mounted
2SC1815
0V
0V
0V
(013C) HEAT-N
HEAT-N
+8V
-8V
(033E) IC4-12
TRSEL4
TRSEL3
(021B) SOCR-N
SOCR-N
(021B) SCLK-N
SCLK
(021C) DOUTP
DOUT
(021B) DINP
DIN
5V
5V
(033E) IC4-12
TRSEL5
(018D) THERM-CMP
THERM-CM
(0220, 023C) PSIN1
PSIN1
(0220, 023C) WRBNS
WRBNS
HEAT-NO
THERM (021D)
THERM-CMP (01YG)
OLER-PCB
Power Supply 1/3



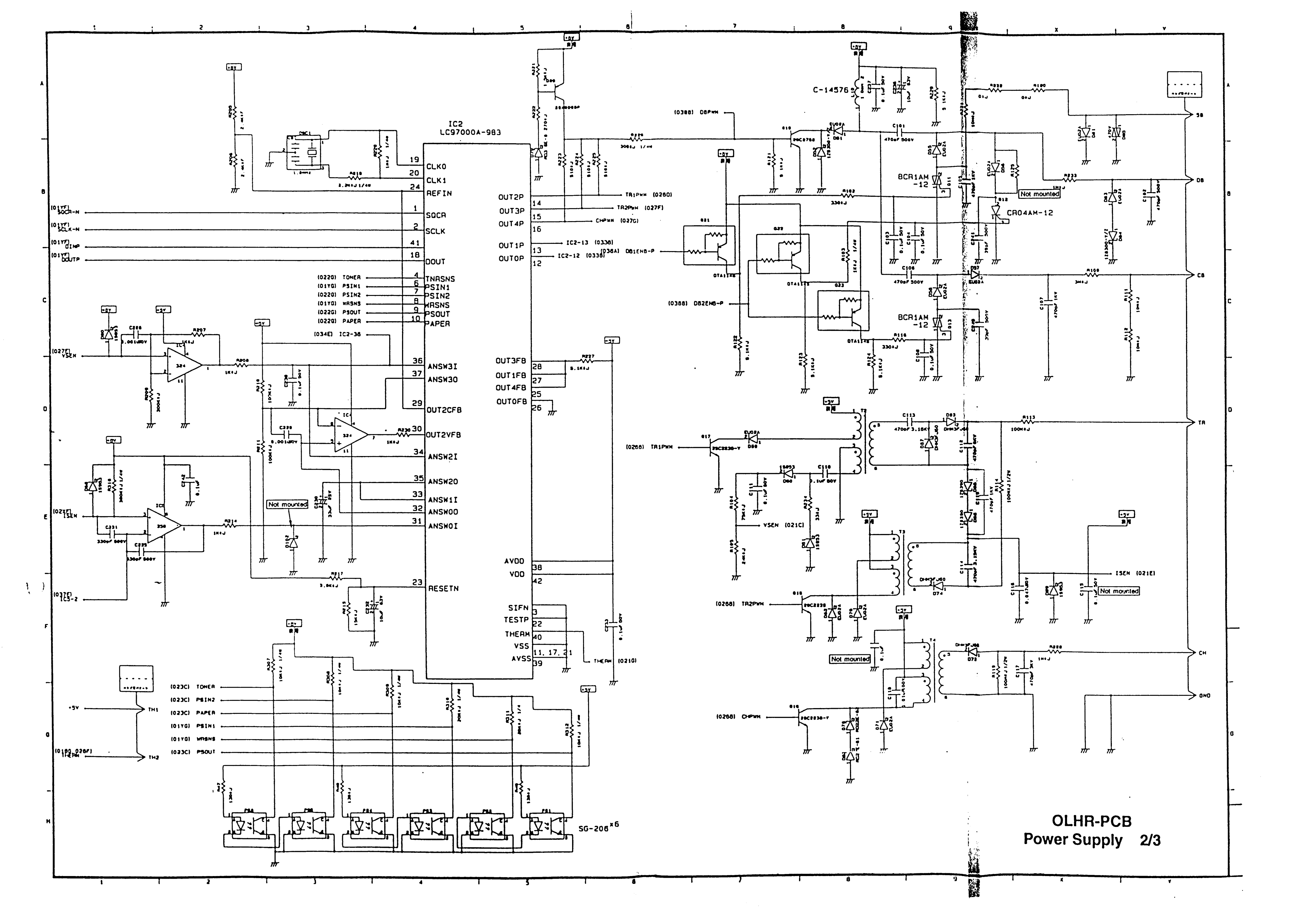
IC2
LC97000A-983
CLK0
CLK1
REFIN
SOCR
SCLK
DOUT
TNRSNS
PSIN1
PSIN2
WRSNS
PSOUT
PAPER
ANSW3I
ANSW3O
OUT2CFB
OUT2VFB
ANSW2I
ANSW2O
ANSW1I
ANSW0O
ANSW0I
RESETN
OUT2P
OUT3P
OUT4P
OUT1P
OUT0P
OUT3FB
OUT1FB
OUT4FB
OUT0FB
AVDD
VDD
SIFN
TESTP
THERM
VSS
AVSS
BCR1AM -12
BCR1AM -12
CR04AM-12
C-14576
SG-206 ×6
Not mounted
Not mounted
Not mounted
Not mounted
OLER-PCB
Power Supply 2/3



(025B) IC2-13
(025C) IC2-12
2SC1815
D81ENB-P (026C)
D82ENB-P (027C)
D8PWM (027A)
(01XE, 01XG) IC4-12
(023C) IC2-38
IC5-2 (021F)
+5V
OLER-PCB
Power Supply 3/3

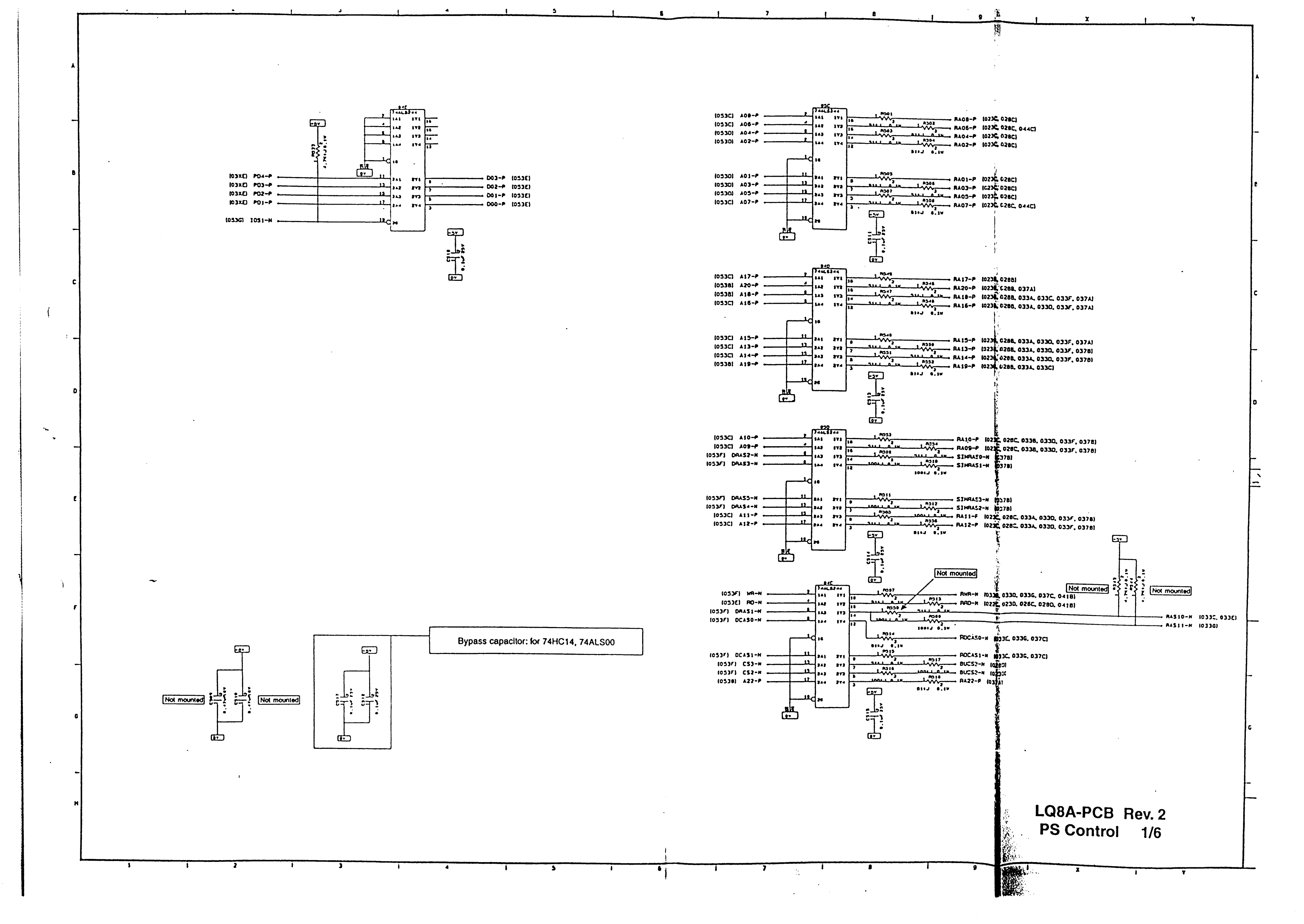


ACIN
L
FG
N
SJ-W2P4A
-0380
SU16V0-40020
T5AH
Single-phase circuit
INLET ASSY
4YS4011-2894P1
ECQ-J0187Y
SNBS-300
/SF-T8-30S
S21ME4FY
TM1261
HEAT-NO
HEAT-N (01X0)
ACOUT
ACOUT (L)
ACOUT (N)
CN1
T1: 4YB4049-7033P2, P3
SU10V07040
/FUS325020
CN2
F2.5A
TF341M
Not mounted
IC1 FA7617P-1
REF
CT
CS
VCC
IN
FB
GUO
OUT
R18
Not mounted
2SC1815
SS-5GL13
CN3
CVOPN-N
+30V
+30V
OVP
OVP
OVP
5V
5V
0V
0V
0V
HEAT-N
+8V
-8V
TRSEL4
TRSEL3
SOCR-N
SCLK
DOUT
DIN
5V
5V
TRSEL5
THERM-CMP
PSIN1
WRSNB
(013C) HEAT-N
(033E) IC4-12
(021B) SOCR-N
(021B) SCLK-N
(021C) DOUTP
(021B) DINP
(033E) IC4-12
(018D) THERM-CMP
(022D, 023C) PSIN1
(022D, 023C) WRSNB
HEAT-NO
THERM (021G)
THERM-CMP (01YD)
2SC3400
OLHR-PCB
Power Supply 1/3

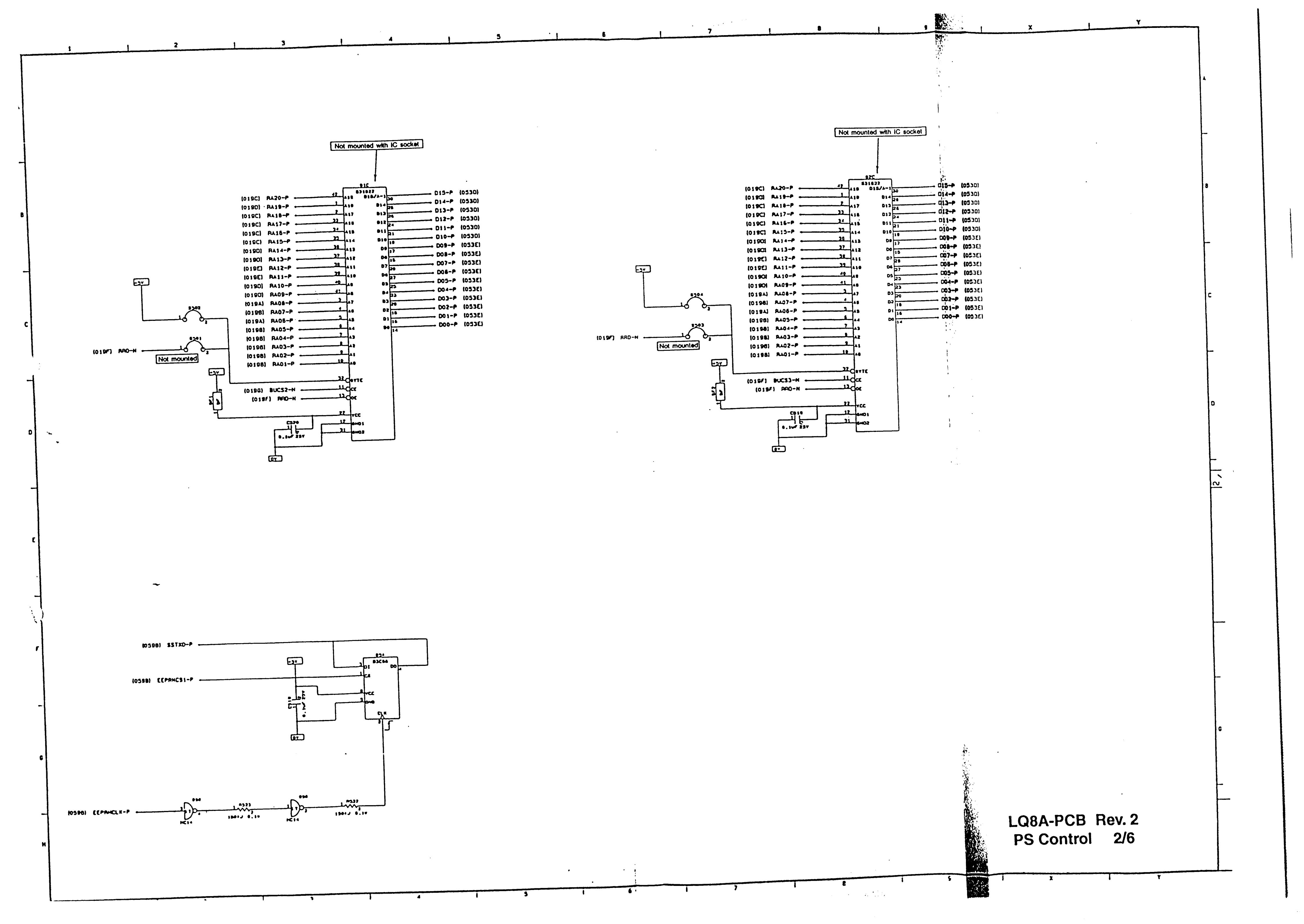


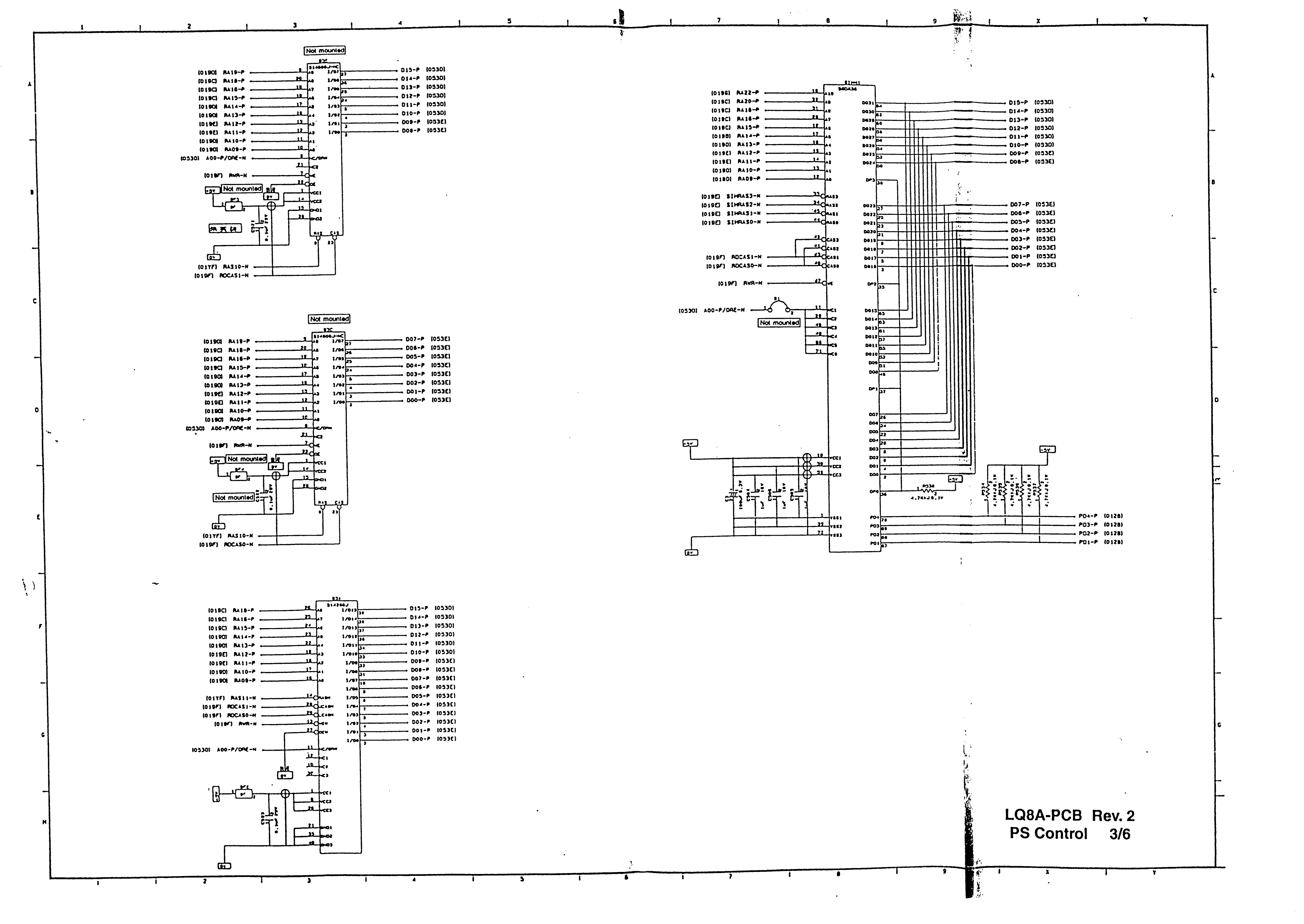
IC2
LC97000A-983
CLK0
CLK1
REFIN
SDCA
SCLK
DOUT
TNRSNS
PSIN1
PSIN2
WRSNS
PSOUT
PAPER
ANSW3I
ANSW3O
OUT2CFB
OUT2VFB
ANSW2I
ANSW2O
ANSW1I
ANSW0O
ANSW0I
RESETN
OUT2P
OUT3P
OUT4P
OUT1P
OUT0P
OUT3FB
OUT1FB
OUT4FB
OUT0FB
AVDD
VDD
SIFN
TESTP
THERM
VSS
AVSS
C-14576
BCR1AM
-12
CR04AM-12
Not mounted
SG-206x6
OLHR-PCB
Power Supply 2/3

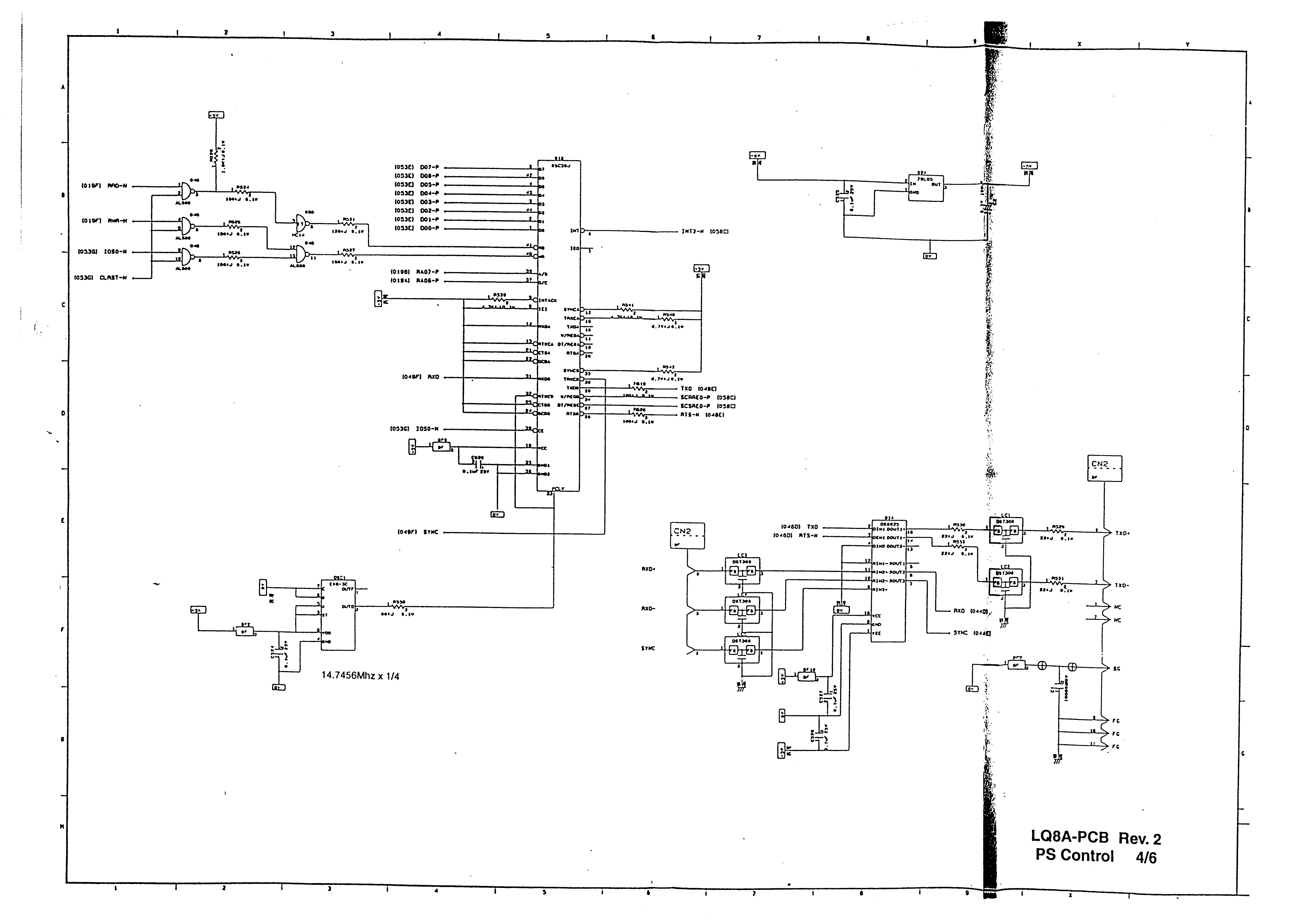
OLHR-PCB
Power Supply 3/3



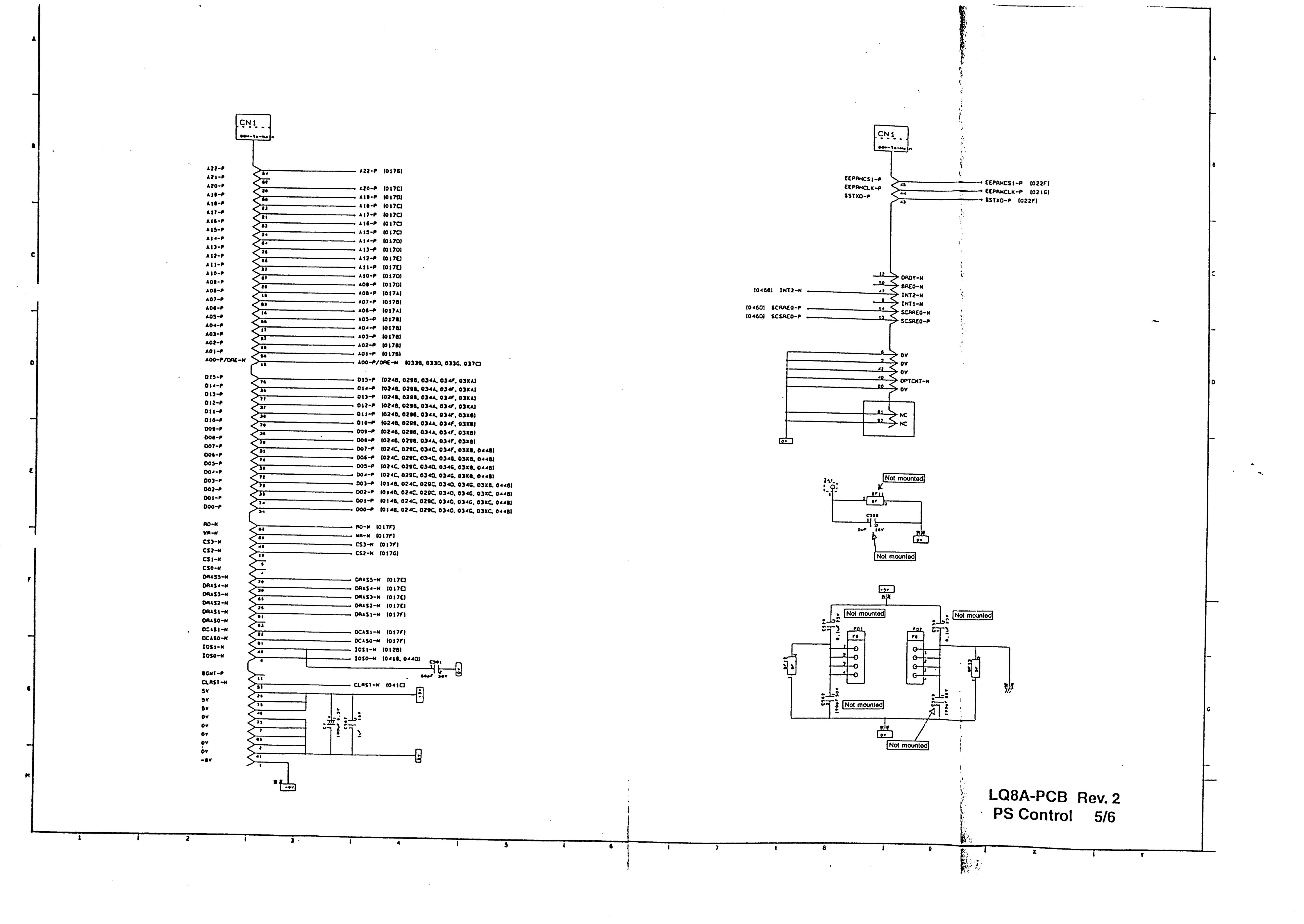
Bypass capacitor: for 74HC14, 74ALS00
Not mounted
Not mounted
Not mounted
Not mounted
Not mounted
LQ8A-PCB Rev. 2
PS Control 1/6


Not mounted with IC socket
Not mounted
Not mounted with IC socket
Not mounted
LQ8A-PCB Rev. 2
PS Control 2/6


Not mounted
LQ8A-PCB Rev. 2
PS Control 3/6



(019F) RAD-N
(019F) RWR-N
(053G) IOSO-N
(053G) CLRST-N
(053E) D07-P
(053E) D06-P
(053E) D05-P
(053E) D04-P
(053E) D03-P
(053E) D02-P
(053E) D01-P
(053E) D00-P
(019B) RA07-P
(019A) RA06-P
(049F) RXD
(053G) IOSO-N
(049F) SYNC
85C30J
INT2-N (058C)
TXD (048E)
SCARED-P (058C)
SCSRED-P (058C)
RTS-N (048E)
78L05
DS8923
(046D) TXD
(046D) RTS-N
RXD (044D)
SYNC (044E)
CN2
TXD+
TXD-
NC
SG
FG
RXD+
RXD-
SYNC
DST306
14.7456Mhz x 1/4
LQ8A-PCB Rev. 2
PS Control 4/6

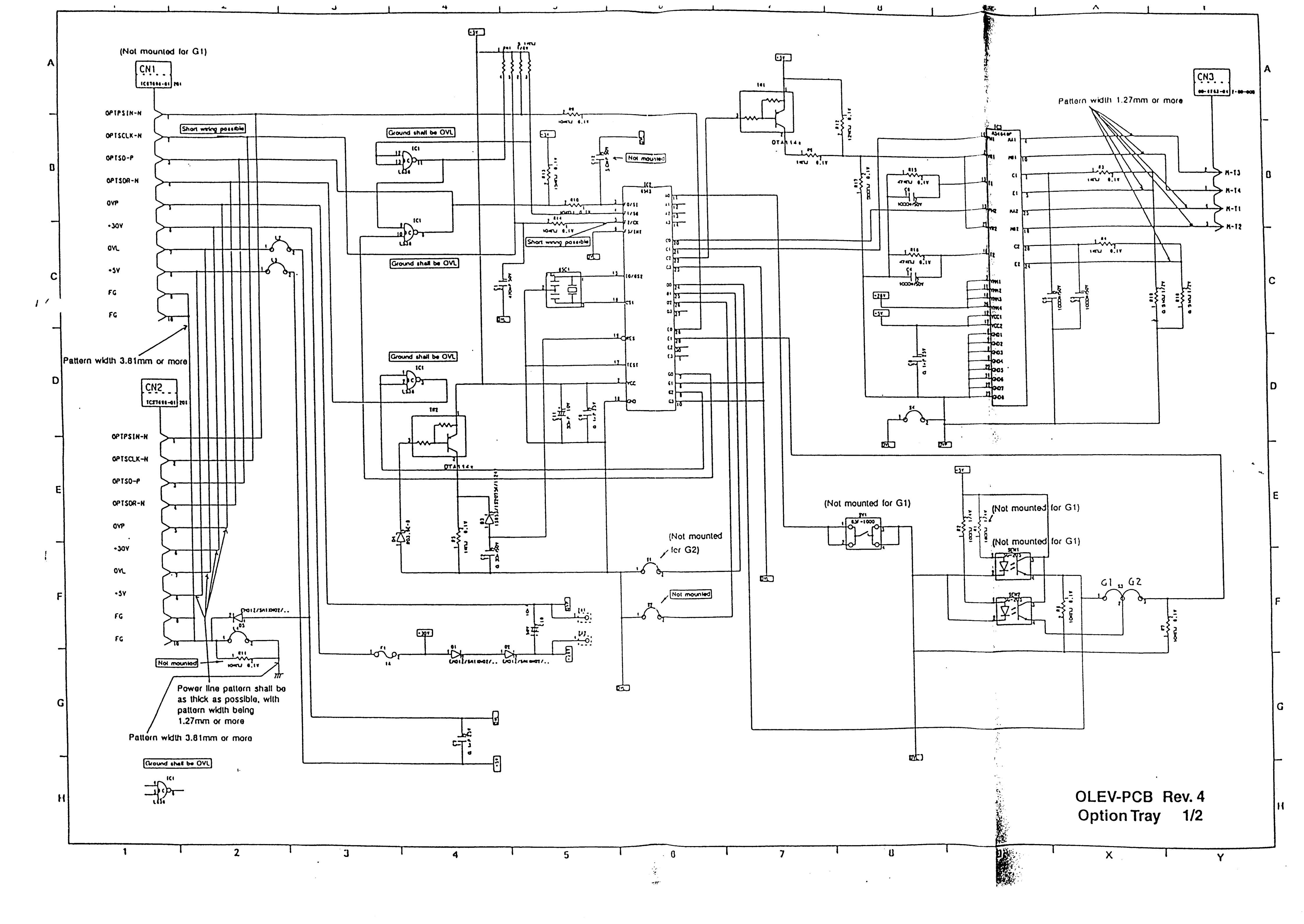

CN1
A22-P [017G]
A20-P [017C]
A19-P [017D]
A18-P [017C]
A17-P [017C]
A16-P [017C]
A15-P [017C]
A14-P [017D]
A13-P [017D]
A12-P [017E]
A11-P [017E]
A10-P [017D]
A09-P [017D]
A08-P [017A]
A07-P [017B]
A06-P [017A]
A05-P [017B]
A04-P [017B]
A03-P [017B]
A02-P [017B]
A01-P [017B]
A00-P/ORE-N [033B, 033D, 033G, 037C]
D15-P … D00-P
RD-N [017F]
WR-N [017F]
CS3-N [017F]
CS2-N [017G]
DRAS5-N … DRAS1-N
DCAS1-N [017F]
DCAS0-N [017F]
IOS1-N [012B]
IOS0-N [041B, 044D]
CLRST-N [041C]
EEPANCS1-P [022F]
EEPANCLK-P [021G]
SSTXD-P [022F]
DRDY-N
BREQ-N
INT2-N
INT1-N
SCRREQ-N
SCSREQ-P
OV
OPTCNT-N
NC
Not mounted
LQ8A-PCB Rev. 2
PS Control 5/6

Vacant Circuit

Vacant Circuit

Vacant Circuit

LQ8A-PCB Rev. 2
PS Control 6/6


(Not mounted for G1)
CN1
OPTPSIN-N
OPTSCLK-N
OPTSO-P
OPTSOR-N
OVP
+30V
OVL
+5V
FG
FG
Short wiring possible
Pattern width 3.81mm or more
CN2
OPTPSIN-N
OPTSCLK-N
OPTSO-P
OPTSOR-N
OVP
+30V
OVL
+5V
FG
FG
Not mounted
Power line pattern shall be as thick as possible, with pattern width being 1.27mm or more
Pattern width 3.81mm or more
Ground shall be OVL
Ground shall be OVL
Ground shall be OVL
Ground shall be OVL
Not mounted
Short wiring possible
(Not mounted for G2)
Not mounted
(Not mounted for G1)
(Not mounted for G1)
(Not mounted for G1)
G1
G2
CN3
Pattern width 1.27mm or more
M-T3
M-T4
M-T1
M-T2
OLEV-PCB Rev. 4
Option Tray 1/2

Connector Name: 00-8263-0412-00-000
Part Number: 224A3357P0040
Part Symbol: CN3

Pin No.	Signal Name	Location	
1	H-T4	01YB	
2	H-T3	01YB	
3	H-T2	01YC	
4	H-T1	01YB	

Connector Name: TCS7698-01-201
Part Number: 221A1622P0082
Part Symbol: CN1

Pin No.	Signal Name	Location	
1	OPTPSIN-N	012B	
2	OPTSCLK-N	012B	
3	OPTSD-P	012B	
4	OPTSOR-N	012B	
5	OVP	012B	
6	+30V	012C	
7	OVL	012C	
8	+5V	012C	
9	FG	012C	
10	FG	012C	

Connector Name: TCS7698-01-201
Part Number: 221A1622P0082
Part Symbol: CN2

Pin No.	Signal Name	Location	
1	OPTPSIN-N	012D	
2	OPTSCLK-N	012E	
3	OPTSD-P	012E	
4	OPTSOR-N	012E	
5	OVP	012E	
6	+30V	012E	
7	OVL	012F	
8	+5V	012F	
9	FG	012F	
10	FG	012F	

OLEV-PCB Rev. 4
Option Tray 2/2

Oki Systems (Danmark) a.s.

Park Alle 382
DK-2625 Vallensbaek
Denmark
Tel : 436 66500
Fax : 436 66590

Oki Systems (Deutschland) GmbH

Hansaallee 187
40549 Dusseldorf
Germany
Tel : 0211 5266-0
Fax : 0211 593345

Oki Systems (España) S.A.

C/Goya 9
28001 Madrid
Spain
Tel : 91 5777336
Fax : 91 5762420

Oki Systems (France) S.A.

44-50 Avenue du General de Gaulle
94240 L'Hay les Roses
France
Tel : 0146 158000
Fax : 0141 240040

Oki Systems (Holland) b.v.

Kruisweg 765
Postbus 690
NL-2132 NG (2130AR)
Hoofddorp
The Netherlands
Tel : 020 6531531
Fax : 020 6531301

Oki Systems (Ireland) Ltd

The Square Industrial Complex
Tallaght
Dublin 24
Ireland
Tel : 01 459 8666
Fax : 01 459 8840

Oki Systems (Italia) S.p.A.

Centro Commerciale "Il Girasole"
PAT. Cellini-Lotto 3. 05/B
20084 Lacchiarella (Milano)
Italy
Tel : 02 900 261
Fax : 02 900 7549

Oki Systems (Norway) A/S

Hvamsvingen 9
P O Box 174
N-2013 Skjetten
Norway
Tel : 0638 93600
Fax : 0638 93601

Oki Systems (Sweden) AB

Box 131
S-163 55 Spanga
Stormbyväegen 2-4
Sweden
Tel : 08 7955880
Fax : 08 7956527

Oki Systems (UK) Ltd

550 Dundee Road
Slough
Berkshire SL1 4JY
United Kingdom
Tel : 01753 819819
Fax : 01753 819899

Oki Europe Ltd

Branch Office
International Bussiness Centre
Pobrezni 3
186 00 Praha 8
The Czech Republic
Tel : 02 232 6641
Fax : 02 232 6621

Oki Europe Képviselet

International Trade Center
H-1075 Budapest
Bajcsy-Zsilinsszky út 12. 11. em. 204
Hungary
Tel : 361 266 6225
Fax : 361 266 0152

Oki Europe Ltd

Branch Office
ul Grzybowska 80-82
PL-00840 Warsaw
Poland
Tel : 02 6615407
Fax : 02 6615451

Oki (Europe) Ltd

Central House
Balfour Road
Hounslow
Middlesex TW3 1HY
United Kingdom
Tel : 0181 577 9000
Fax : 0181 572 7444

Oki (UK) Ltd

3 Castkecary Road
Wardpark North
Cumbemauld G68 0DA
Scotland
Tel : 01236 727777
Fax : 01236 451972



People to People Technology

Oki Data Corporation

4-11-22, Shibaura, Minato-ku,
Tokyo 108, Japan
Tel: (03) 5445-6162 Fax: (03) 5445-6189

M-521308 1A 11-96 Printed in Japan